



Railway Age

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Track Exhibit at N. Y., N. H. & H. Yards, New Haven, Conn., at Recent A. I. E. E. Meeting

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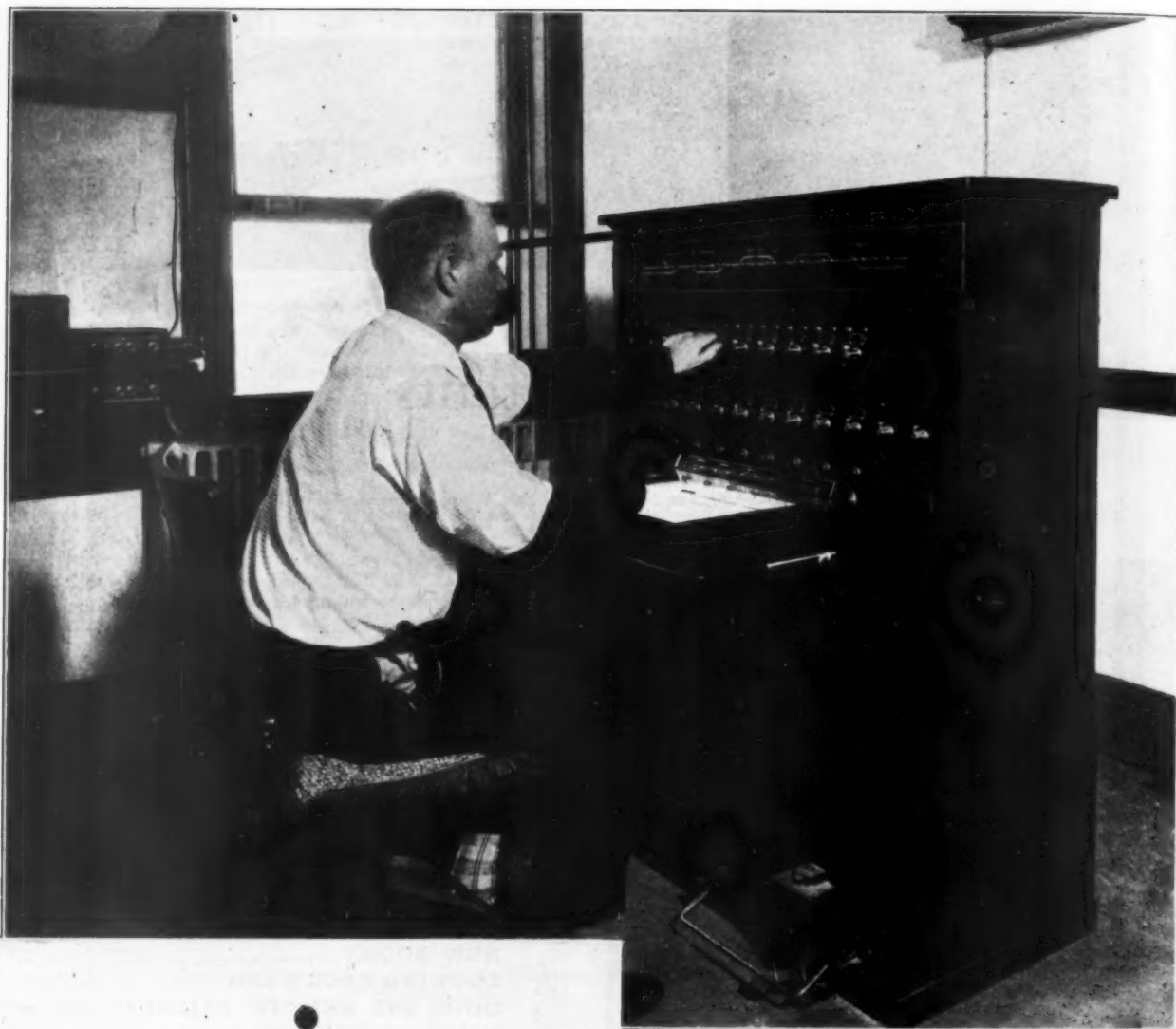
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Railway Age

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A Coincidence, or Cause and Effect?

THE Interstate Commerce Commission's recently issued statement of operating averages of Class 1 roads for 1921-1927 discloses four railroads with passenger service operating ratios for 1927 below 70 per cent. Of these four, only one has shown a declining passenger operating ratio over the past few years. On this road the passenger operating ratio in 1921 stood at 82.9. It was reduced each succeeding year until in 1927 it reached 68.7—an improvement of 17 per cent in the seven-year period. Over the same period the road's passenger traffic density increased slightly, in spite of highway competition, and it handled this increase without an increase in passenger train-miles. While several factors have, no doubt, aided in this favorable showing, can it be entirely a coincidence that this same company is also the country's largest railroad operator of highway motor coaches?

Commodity Carding of Freight Cars

MANY railroads have adopted the plan of commodity carding of car equipment, whereby freight cars are inspected previous to loading, declared in fit condition to contain specific commodities and furnished with side cards indicating what these commodities are. The object of this inspection and carding of freight cars is to place in the hands of car service and operating officers information which will permit furnishing cars for specific loadings to which their design and condition adapt them. In a recent address, C. J. Nelson, chief interchange inspector of the Chicago Car Interchange Bureau, said, "There is nothing more irritating to a shipper than to have cars placed at his plant, which he expects to load at a certain time, and then find that they are unfit for the shipments for which they were ordered; it is about as irritating to have the shipments damaged or delayed in transit, on account of inferior equipment. This is something that we can prevent to a greater extent than has been done in the past." He also said, "From personal observation, I judge that most unnecessary car mile haulage is created on account of the rejection of cars that are offered to connecting lines on orders for designated commodities, either at interchange points or by the shippers, on account of being unfit." A considerable number of roads have not yet adopted this system of preliminary inspection and side carding of cars, and many that have adopted it are not securing the desired results, largely due to inadequate instruction and supervision of car inspection forces. Cars can be found on almost every large road that are carrying side cards applied many months before and still indicating that the cars may safely be loaded with commodities for which they are now in reality entirely unfit. After these defective cars are

placed for loading, agents or shippers assume that they may rely on the accuracy of the information on the side cards, and damage claims result. The general adoption and carrying out of a uniform plan of preliminary car inspection and side carding of freight cars is being suggested from numerous sources as a constructive move in providing better service for shippers, reducing damage claims, and expediting car movement.

Engineering Forces on Construction

IT is doubtful if there is any phase of railroading that has been subject to less change than the engineering work incident to the location and construction of new lines. There is every reason, therefore, why such work should have reached a degree of standardization such that there would be common agreement as to the amount of work to be done and the size of the engineering force necessary to carry it out. Yet such does not appear to be the fact. The lengths of residencies and the number of men assigned to each resident engineer's staff vary as much as 25 per cent on projects that are substantially similar insofar as the volume of grading, standards of construction, nature of the country and the completion schedule are concerned. Therefore, unless it is to be inferred that some roads are extravagant in their expenditures for engineering, the conclusion must be reached that certain other roads do not maintain sufficient forces to permit thorough supervision of the contractors' operations. Engineering costs ordinarily constitute such a small proportion of construction costs, that it is not in the interest of economy to spare reasonable expense for engineering supervision. This is a subject to which the American Railway Engineering Association has given little attention in recent years.

An Old Spirit in a New Dress

PRIOR to the World War a railway that desired to enter a territory served by another road proceeded to build into that area, checkmated wherever possible by the original occupant through legal measures and not infrequently by physical force. Not uncommonly two systems undertook by competitive building, to reach a territory coveted by both. Among the last of the outstanding clashes of this character were the struggles between the Hill and the Harriman interests in the Northwest, including the attempt of the Union Pacific to enter Tacoma and Seattle, and the competitive construction up the canyon of the Des Chutes river. Following the passage of the Transportation Act, this competition has been forced into less bloody although no less bitter channels. This is exemplified by the situation that arose in the western part of Texas

two years ago, when the Santa Fe, the Burlington, the Frisco and an independent line all undertook to build into that area. The feeling that was so evident in the hearings before the Interstate Commerce Commission was in no respect "stage play", "for the bitterness then engendered has not yet been dissipated in more than one quarter. Equally spirited have been the attempts of the Pennsylvania and the Baltimore & Ohio to prevent the West Virginia from building a 38-mile extension in Pennsylvania that will connect existing lines to form a through route from the Atlantic Seaboard to the Central west. Such illustrations suffice to show that while clashes of armed forces of rival roads may have gone the way of the ox cart, the spirit of competitive rivalry is as keen as ever.

Railway Terminals as Airplane Landing Places

RECENT reports from abroad indicate that the British railways are making plans for the use of areas above their passenger terminals as landing places for airplanes. Suggestions that similar use be made of passenger terminals in this country have been made frequently in the past. Admittedly, the airplane will be of the greatest use as a medium of transportation when it is co-ordinated as closely as possible with other carriers. It is obvious that such co-ordination requires the close proximity of the two kinds of carriers with each other; hence the desirability of providing places for airplanes to land on railway terminals. In the past and even now, planes have required large areas for taking off and landing, owing to their inability to rise or come down safely without making the ascent or descent gradually. Improvements in the design of aircraft, however, are so steadily reducing the space required for take-offs and landing, that all indications point to the early arrival of the day when planes will be able to ascend from and descend to a comparatively small space, such as that available at the average large passenger terminal in this country. The British railways apparently feel that this will soon be possible. When this has been conclusively demonstrated, it is to be expected that the American railways will take similar steps. Their active interest in the development of air transportation has already been demonstrated in a number of cases by financial or traffic hook-ups of railways with air lines.

Added Capacity on Grades

SECTIONS of second track have frequently been constructed to provide added capacity on heavy grades where trains "bunch" because of reduced speed. The second track, of course, eliminates interference with trains moving in the opposite direction, but the real problem is commonly to secure added capacity in the one direction up the grade, especially if tonnage trains must otherwise be held in a yard or on sidings to clear passenger or fast freight trains. This problem is being solved in some cases by the installation of either-direction automatic signaling on the left hand track up the hill. By directing train movements by signal indication rather than by train orders and time tables, idle sections of the left hand track can be used to run passenger trains around slower trains that are

proceeding up the hill on the normal right hand main. Since train movements down grade require less time than up-hill movements, the left hand track is idle a greater proportion of time than the up-hill track, even with approximately the same number of trains in each direction. The Rock Island is utilizing such an installation on a section of double track in Kansas where on a 10-mile ascending grade westbound from Volland, Kan., to Jones, either-direction signaling installed several months ago on one track is assisting in keeping all trains moving without delays. As a result the average miles per hour of westbound freight trains in this district was increased from 15.28 in October, 1927, to 17.28 in October, 1928. Other factors were of assistance, but operating officers report that the either-direction signaling contributed largely to this increase. Such an installation may provide the means of eliminating delays on grades on other double-track lines.

Efficient Terminal Operation

AT the last meeting of the American Association of Railroad Superintendents a committee presented a strong argument in favor of joint terminals. The conclusions drawn in this report were supported by elaborate documentary evidence proving that much could be gained, in the way of operating economy, by the establishment of joint terminals.

This report was convincing to those who studied it that joint operation in many cases would bring about numerous benefits, but unfortunately, it is often not immediately possible because of numerous difficulties to be ironed out and problems to be solved.

In the final analysis, however, it is the principle of joint operation that counts. The important terminals at Cincinnati and at Cleveland are both being operated along these lines. While neither of them is under joint operation, both are operated under joint control, which is, assuredly, a step in the right direction and which, when the control is properly exercised, as it is in both these terminals, results in securing many of the benefits obtainable by means of actual joint operation.

The joint control is obtained in both terminals through the medium of centralized operating committees. These committees consist of an operating officer from each of the railways entering the terminal, supplemented by a chairman and his office force, who devote their entire time to the activities of the committee. This committee controls the terminal in-so-far as interline operations are concerned. The joint inspection, interchange, smoke inspection and other departments of interline operations are under its supervision and control. In addition, the committee acts as a contact agency, not only between the railways themselves, but also between the railways, on the one hand, and the shippers, receivers, civic bodies and city officials on the other hand.

A truly remarkable success has attained the activities of these committees. The results obtained have been described in detail in the *Railway Age*. It might be well to mention here, however, that the showings made in the way of reducing unnecessary transfers of cars, clearing up exceptions and accelerating interchange in these two terminals are far above the average of all the terminals in the country.

There is no secret as to how these results were obtained. The answer lies in co-operation, and, above

all, in the mutual confidence created among the railways and between the railways and the public.

The problems encountered at Cleveland and Cincinnati are not different from those to be solved at any terminal, and the success which has attended the efforts of the joint operating committees at these two places would seem to justify a careful study of each terminal to see whether similar methods would not produce similar results elsewhere.

Another Railway Achievement

THE harvesting of wheat with combines, replacing the old binder, shock and thresher method, has grown rapidly in the last few years. This has been particularly true on the larger wheat farms. The Santa Fe alone hauled 1,012 carloads of combines and tractors into its wheat-producing territory prior to the shipping season, while a survey made by the state agricultural department of Kansas shows that, nearly 97 per cent of the crop in the western third of the state, was harvested with combines. On the smaller farms in the eastern section of the wheat belt the use of combines is not nearly so prevalent, although as a whole, the harvesting has been speeded up materially.

This change in agricultural methods, like many changes that have taken place in other industries, has placed an immediate tax on the initiative and resourcefulness of the railways. The combine method permits the farmers to dump their wheat into the country elevators and thence onto the railways practically as soon as it ripens. The wheat shipping season, instead of extending over six months, as heretofore, is now concentrated into about two months, and for a period of two to three weeks, the loadings are tremendous. This concentration of movement results in an urgent and pressing demand upon the railways for supplying empty cars and moving loaded cars.

It is not so many years since when, even with an extended shipping season, a bumper crop would cause the railways acute discomfort and, in those days, shortage of cars suitable for grain loading was considered a necessary evil. The efforts of the Car Service division and the shippers' regional advisory boards eventually surmounted this difficulty. Hardly had this been accomplished, however, when the new method of harvesting again "upset the apple-cart", and placed a renewed and severe strain on the ability of the railways to handle the business.

The manner in which the roads have met the situation supplies an interesting commentary on their ability to meet unusual circumstances. The handling of the wheat afforded an acid test for several modern operating methods, all of which proved their worth under adverse circumstances. Still ably assisted in the matter of car supply by the two organizations previously mentioned, several of the railways applied the "maintracking" principle to the handling of empty cars. Empties were pooled at certain points until needed, when they were built up into solid trains which were run on manifest schedules to distribution points in the producing territory, from which points switching locals took them out to the country sidings for loading. This "maintracking" of empties served a double purpose. First it insured a prompter movement of empties to the places where they were needed, and, second, by keeping the empties out of intermediate yards, it gave those

yards relief that was well utilized for the handling of loaded cars of wheat.

In addition to car shortages, the roads were formerly faced with power shortages, which were then relieved, if at all, by the transfer of locomotives from other sections of the railway, at best a cumbersome and expensive process, even where the locomotives could be spared.

To increase the utilization of their road locomotives, most of the wheat-handling roads have resorted to extended engine runs, the success of which, on various lines, has frequently been reported in the *Railway Age*. To increase the utilization of yard power, double and triple-crewing of switching locomotives was made effective. The increased utilization of road and yard power thus obtained has been such that, on many lines, it has been unnecessary to transfer any locomotives to the wheat-handling territory from other parts of the railway.

Thus, through the exercise of ingenuity, the railways have been able to meet the peak demands of the concentrated shipping season with such effect that, on practically all of the lines, the wheat was handled without complaints from the shippers as to car shortages or delays to loaded cars.

Business Men and the Railways

THE freight business and earnings of the railways are more satisfactory than they were a year ago, and their prospects for next year are better than they were then. As has often been said in these columns, however, prevailing tendencies are more important than present conditions or immediate prospects. The tendencies which prevail at any time in the railroad or any other industry, unless changed, will determine future conditions in the industry and its ability to produce good financial results and render satisfactory service to its customers.

No railway executive weighs his words more carefully or is less inclined to criticize regulation or talk pessimistically than Daniel Willard, president of the Baltimore & Ohio. There is, however, no railway executive who is more competent to appraise prevailing tendencies in the railroad industry as compared with those of past years. He was a leader of the railways in their struggle for higher rates before the war, and is especially well-informed regarding the conditions and tendencies which prevailed then, the failure of business men and regulating authorities to recognize which caused the so-called "breakdown" of the railways during the war, and resulted in five years of car shortages and in government operation. Therefore, the views expressed by Mr. Willard in his address last week at the dinner of the Railway Business Association should be regarded as especially significant by all those who should be concerned about the direction in which the railways are headed.

Mr. Willard referred to an address made by President Sargent of the Chicago & North Western a year ago in which he discussed the question, "Are We Drifting Back Again?," meaning "Are the railroads drifting back again?" "If there had been any doubt at that time concerning the right answer to this question," said Mr. Willard, "in my opinion there can be no doubt concerning the correct answer at this time. Results and tendencies clearly show that the railroads are gradu-

ally, but none the less definitely, drifting back in the direction of the conditions existing before the World War." Mr. Willard's address, in which he presented data and arguments in support of this view, was published in the *Railway Age* of November 24.

Some of the most convincing evidence upon the subject was given in a report made by the Bureau of Railway Economics to the American Railway Association at its meeting last week. This showed that the capital expenditures made by the railways during the first nine months of this year were \$70,000,000 less than in the corresponding part of last year, and about \$130,000,000 less than in the corresponding part of 1926. It was estimated that total capital expenditures during the year will be \$650,000,000, or about \$200,000,000 less than the annual average during the last four years, and about \$400,000,000 less than in 1923. It was also shown that during the first nine months of the year total expenditures for the maintenance of the properties were \$73,000,000 less than in the corresponding part of 1927, and it might have been added that they were \$106,000,000 less than in the corresponding part of 1926. The decline in both capital and maintenance expenditures has resulted from retrenchments affecting the improvement and condition of all classes of railway property. The reductions in purchases of equipment have been especially large, and as a result the freight car surplus became smaller this fall than at any time for five years, although the total traffic handled was less than in 1926. There can be no question as to the cause of these developments. They are due to the fact that the percentage of return earned by the railways upon their investment became the lowest in 1927 since 1922, and thus far this year has been at a lower rate than last year.

Such views as those being expressed by Mr. Willard and other railway executives, and the facts by which they are supported, should serve as a warning to railway employees, business men and regulating authorities. The year 1928 is being acclaimed as one of unusual activity and prosperity in many industries. At present indications are that the year 1929 also will be one of unusual prosperity, and if it is the railways may reasonably expect, if they are fairly treated in the regulation of wages and rates, to participate in this prosperity. It is, however, a circumstance the significance of which cannot safely be disregarded that in 1928 the railways have not prospered, in spite of prosperity in many other industries. This naturally and forcibly raises a question as to the effect that would be produced upon railway earnings by a decline a year hence or later in general business activity. The railways are now rendering the best service in their history. They are being operated with great economy. If they cannot get better net results in a period of business activity such as this, what would their financial results become if present tendencies in the industry should continue to prevail, and there should be in future a decline in their freight traffic as large or larger as that in 1927?

The most surprising feature of the situation is the general attitude of business men. They express high appreciation of the character and value of present railroad service. They agree that deterioration of this service would be disastrous to the nation. They do not question the justice or desirability of the railways being

allowed to earn a fair return. At the same time, few of them manifest any concern because the railways have been and are now earning much less than a fair return or because present tendencies in the industry are similar to those that prevailed before the war. On the contrary, they acquiesce in or actually favor policies that intensify these tendencies. Perhaps the most striking illustration is afforded by the attitude of the business interests of the Mississippi valley. They favor not only extensive development of inland waterways, but government ownership and operation of barge lines upon them and government-owned terminals to serve the barge lines. They secured the passage of the Denison bill, which the Interstate Commerce Commission has now held authorizes and directs it to establish through routes and rates by rail and water carriers without any previous hearings regarding their reasonableness. They demand co-operation between the railways and inland waterway carriers, but apparently their sole idea of co-operation is action which will divert traffic from the railways and reduce their earnings. At the same time, in communities such as Chicago, where the demands for the diversion of traffic from the railways to the waterways are strongest, there are also loud demands for huge expenditures by the railways for expensive passenger stations, electrification of terminals, and so on.

In the circumstances, the course which railway managers must take seems clear. First, they must continue to give the best service consistent with economical operation and to make all the improvements conducive to these ends that present and prospective earnings justify. At the same time, they must make the best fight they can before Congress and the Interstate Commerce Commission against policies that are unfair to them and in favor of more liberal and constructive regulation. An essential part of their effort to protect railway service and earnings will be a campaign of education to inform the public, and especially business men, regarding present inimical government policies, the results they already are producing and the results they will produce in future if not changed.

There is a tendency in some quarters practically to deny to the railroads the right to defend themselves. They are criticized for opposing the abolition of the Pullman surcharge, reductions of freight rates under the Hoch-Smith resolution and government promotion of water competition, and it is intimated that by opposing such policies they will antagonize different interests which, in consequence, will become indisposed to support their claims for fair regulation. But, in the opinion of most railway officers, the measures mentioned are themselves conspicuous parts of the general program of unfair regulation. It is unquestionably true that the railways cannot oppose any policy favored by any particular group or interest without antagonizing that group or interest, but the only policy that they can safely follow is to oppose every measure the adoption of which they believe would be unjust and inimical to them.

Prevailing tendencies in the railroad industry involve more danger to the industry and commerce of the country than they do to the railroads, and if it is not possible to make other business interests see this in time they will have to take the consequences along with the railroads.



In the Caliche Formation at the Head of the Quitaque Canyon

Completes 207-Mile Line in Texas

Fort Worth & Denver South Plains builds longest extension undertaken in recent years

WHAT is by far the largest single railway extension built in the United States in recent years solely for the purpose of providing local transportation in a rapidly developing territory was opened to traffic on November 23 in western Texas. It comprises the building of the 207-mile line of the Fort Worth & Denver South Plains, which is an extension of the Fort Worth & Denver City, the Texas subsidiary of the Colorado & Southern. The latter, in turn, is a subsidiary of the Chicago, Burlington & Quincy.

The new line extends from Estelline, Tex., on the Fort Worth & Denver City in a westerly direction for 132 miles through Hall, Floyd, Hale and Castro counties to Dimmit, with a branch north 20 miles to Silverton in Briscoe county and another branch south 54 miles to Lubbock. This territory was previously without railroads except that portion of it which is tributary to the Plainview-Canyon line of the Panhandle & Santa Fe, and a branch of the same road from Plainview to Floydada.

Active Competition to Serve Territory

Authority to build the Fort Worth & Denver South Plains was obtained from the Interstate Commerce Commission in November, 1926, after extended hearings in which the commission considered not only the presentations made on behalf of this line, but also those offered in the interest of three other proposals for extensions into the same and adjoining territory. While it would serve no useful purpose to present here the reasons which prompted the commission to favor the project of the Fort Worth & Denver South Plains, it is of interest to review briefly the considerations which led to such active competition for an opportunity to develop the territory in question and the various plans for carrying out such development.

The territory most largely affected by the proposed extension is known locally as the South Plains, the sig-

nificance of which is made clear in the following statement from the report of the Interstate Commerce Commission, made public on November 19, 1926, and abstracted in the *Railway Age* of November 27 of that year, page 1033:

"The Staked Plain is a high table-land covering an area of approximately 30,000 square miles in Northwest Texas and the extreme eastern part of New Mexico. Its limits are marked by a steep escarpment, precipitous in places, known locally as the Cap Rock, raising the Plain from 500 to 700 ft. above the surrounding country. The extreme northern part of the Plain is in the Panhandle and the region is largely known by that name. The main line of the Fort Worth & Denver crosses this part of the Plain, passing through Amarillo. The name South Plains is given to a large part of the Plain extending southward from the Panhandle country."

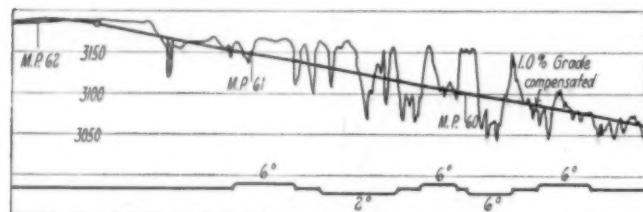
The economic significance of the South Plains is indicated by the following excerpt from the report:

"Until about 20 years ago the only industry in the South Plains region was cattle raising. The testimony is that from 75 to 90 per cent of the land is cultivable and generally fertile; that the average rainfall is more than 20 in. and is mostly in the growing season; and that in a large part of the area abundant water is found in wells of moderate depth and the topography favors irrigation. The principal crops grown are wheat, grain sorghums and cotton. The yield of wheat is uncertain, owing to the variations of seasons. Grain sorghums seldom fail. Cotton is very drought-resistant, yields well, and is believed to be immune to the boll weevil. Alfalfa is grown under irrigation and in the depressions along some of the "draws" or dry water-courses where there is moisture from sub-surface water. Some vegetables are grown for market on irrigated land near Plainview. The raising of cattle and hogs is an important industry."

Among the plans to serve this region, in addition to the Fort Worth & Denver City, the most ambitious was that of the Texas, Panhandle & Gulf, which proposed a through line extending northwesterly in a direction generally parallel with the F. W. & D. C. from Fort Worth, through Seymour, Paducah, Silverton and Dimmit to Tucumcari, N. M. This was to be an entirely new line except that it was to incorporate a portion of the Gulf, Texas & Western. The Panhandle & Santa Fe, which already serves a part of the territory, proposed branches to Dimmit and Silverton and an extension to the southeast corner of Floyd county from Floydada. The Quanah, Acme & Pacific, a subsidiary of the St. Louis-San Francisco, proposed an extension from McBain to Floydada and this project is the only one besides that of the F. W. & D. S. P. which was authorized.

Character of the Country

Not all of the F. W. & D. S. P. is located on the Staked Plains, for the escarpment or Cap Rock lies nearly 50 miles west of Estelline, the intervening territory being a part of the great North Central Plain



Profile and Alinement Diagram of the Quitaque Canyon Line—Upper Portion

of Texas which is of earlier geologic origin than the former and possesses entirely different physical characteristics. The new line may, therefore, be divided into three primary units as follows: From Estelline to Milepost 46, comprising the portion traversing the rolling country of the North Central Plain; from Milepost 46



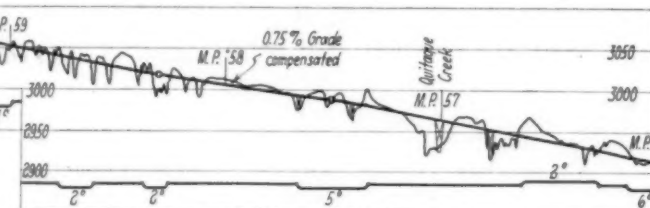
One of the Two Tunnels in the Quitaque Canyon Line

to Milepost 62, embracing the ascent of 666 ft. from this plain to the top of the Cap Rock; and the remaining and larger portion, comprising the lines on the Staked Plain. This subdivision was observed for administrative purposes in construction.

The Staked Plain has the appearance of being absolutely level but actually slopes upward to the west at the rate of about nine and one-half feet to the mile. On the whole, therefore, the construction of the line on the Plain presented a minimum of difficulties. The grading was exceedingly light except in the vicinity of Lubbock, where the general surface is broken by water courses. The contrast between the work on the 144 miles of line on the Plain and the 62 miles of line immediately west of Estelline is indicated by the fact that the grading on the first 62 miles averaged nearly four times as much per mile as on the Plain.

Location Problems

The most formidable problem presented in the location of the line, the solution of which had a vital influence on the location of the line as a whole, was the discovery of a place where the ascent of the Cap Rock could be made with grades not exceeding one per cent and curves limited to a maximum of six degrees, without incurring a prohibitive expenditure.



The escarpment or Cap Rock presents some striking contrasts. As seen from some distance to the east, it has the appearance of a precipitous palisade with a steep and relatively unbroken front, but on closer approach it becomes apparent that a large part of its height consists of talus slopes, and that while the top of the exposed rock ledge is at a remarkably uniform elevation, the face of the ledge and the slopes below have an exceedingly irregular outline. Because of this, an attempt to locate an ascending line on the face of the escarpment was unsuccessful, for the face was found to be so irregular that a line supported against it would either entail excessive curvature or a prohibitive volume of grading in the slope and an expenditure for tunneling and viaducts in the zone of the exposed rock ledge that would have been entirely out of the question.

While this plan proved impracticable by reason of the irregularity of the face of the escarpment, there is a singular absence of canyons of any depth; in fact, between Tule creek on the north and White river on the south, an air line distance of 60 miles, there are only two breaks in the solid front that can be designated as canyons. One of these, the canyon of Los Lingos creek, was found to be far too short, but the canyon of Quitaque creek, which breaks into the Cap Rock for a distance of about eight miles offered greater promise. However, it was only after protracted reconnaissance that a practical location for a one-per cent line was discovered.

From Estelline to Quitaque

The eastern terminus of the new line was established at Estelline because that is the nearest point on the Fort

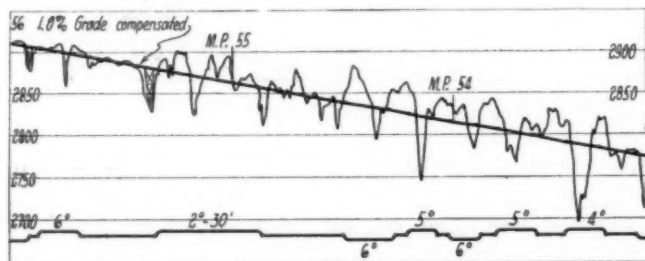
Worth & Denver City to the mouth of the Quitaque canyon. But instead of building the approach to the escarpment on a direct line from Estelline to the canyon, it was located from four to seven miles north of such line, to take advantage of the more favorable ground in the valley of the Prairie Dog Town fork of the Red river and to avoid land at a higher elevation further south, as well as to cross three tributaries of the North Pease river closer to their sources where the cross drainage is less precipitous and the valleys are shallower. The location selected also made it possible to make contacts with three existing towns, Tampico, Turkey and Quitaque, it being necessary in only one case, that of Turkey, to make any detour from the most favorable location from the standpoints of distance and curvature.

This portion of the line was also built to a grade of one per cent against westbound traffic, as determined for the canyon line, while the grade against the eastbound or loaded direction of traffic was established at 0.6 per cent with a maximum curvature of 4 deg. The country traversed may be described as heavy rolling, the configuration being in large part the result of geological disturbance, as evidenced by anticlinal folds in the stratification encountered in the cuts. However, at the stream crossings, erosion of sedimentary deposits has played an important part in producing the differences in elevation encountered. A third type of formation traversed embraces some sand dunes near Estelline, which have given rise to some difficulty from blowing sand, particularly in the cuts.

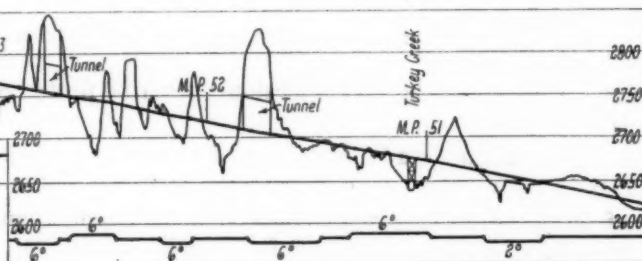


Typical Cuts in the White Caliche Formation

of 666.31 ft. Leaving Los Lingos creek, there is a tangent $4\frac{1}{2}$ miles long across a mesa between that stream and the mouth of Quitaque canyon, and for two miles of this distance the line is on a level grade and the work is light. It is in the next $6\frac{1}{2}$ miles, where the line is supported against the north side of the can-



Profile and Alinement Diagram of the Quitaque Canyon Line—Lower Portion



In general the material encountered in the first 46 miles of the line was earth, sand, sandstone and clay, supplemented in many of the cuts by a float gypsum rock which in some cases appeared as isolated fragments and in others as more or less continuous sheets from a few inches to two feet or more in thickness. The sand rock, which was the predominating material, required the use of explosives in excavation, but becomes soft on exposure and is subject to wash. The grading on this section totaled 1,400,000 cu. yd. or about 30,000 cu. yd. per mile, but greatly exceeded this average in some sections, particularly in the vicinity of Tampico.

The Canyon Line

By far the heaviest grading was required in the construction of the Quitaque Canyon line between Milepost 46 and Milepost 62. The total volume of material moved in this 16 miles was 1,200,000 cu. yd. or an average of about 80,000 cu. yd. per mile, but with a maximum in some individual miles reaching nearly 200,000 cu. yd.

The ascent starts at the bridge across Los Lingos creek at Elevation 2522.79 and the summit is reached at Milepost 62 at Elevation 3189.10 or a total ascent

yon, that the most difficult construction was encountered. The grading was heaviest and numerous curves, most of which are six degree, occupy 4 miles of the $6\frac{1}{2}$ miles. However, as indicated on the profile, a location has been obtained in which individual cuts and fills are relatively short and a good balance of quantities in excavation and embankment was obtained. A wide variety of materials was encountered, including sand and gravel, and gray, pure white and red sandstone.

Length of Tunnels

There are two tunnels, one 669 ft. long and the other 386 ft. long. The second was driven to replace a cut 80 ft. deep after excavation for a distance of 200 ft. from the east end uncovered a soft, unstable material that would have demanded a flattening of the slopes and therefore a much greater quantity in excavation than had been anticipated.

At Milepost 57 the line crosses Quitaque creek, to follow the south side of the canyon for the remaining distance to the summit. For the first $2\frac{1}{2}$ miles of this section, the line lies on a mesa or bench in the side of the canyon and the grading and curvature are much lighter; and for a distance of 4000 ft. the grade was

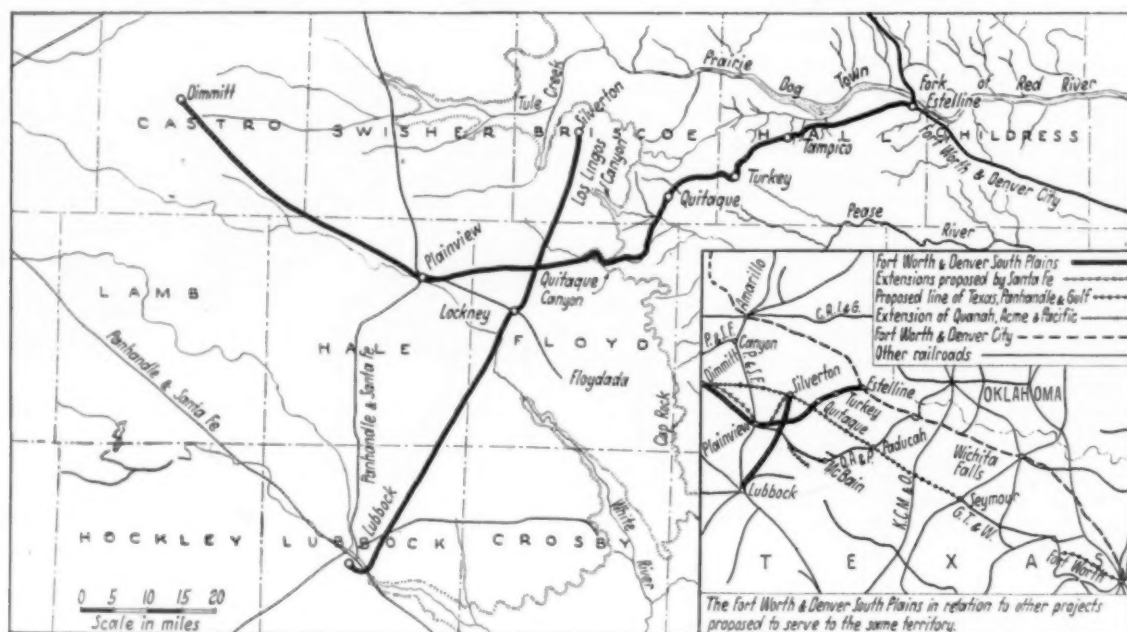
flattened to 0.75 per cent to accommodate a passing track.

Heavier work was required again in the last $2\frac{1}{2}$ miles, where the line is supported against the south wall of the canyon in the formation comprising the top strata of the Cap Rock, a white calcareous material known as Caliche. Based upon the difficulties entailed in excavation, this material warrants the classification of solid rock, but the use of explosives causes much of it to pulverize and it is easily handled in the embankments, being subject to little settlement. However,

but where the roadbed was widened to 34 ft. the sides of the cuts were made $\frac{3}{4}$ to 1 or even vertical to avoid excessive quantities.

The track is laid with 85-lb. relayer rail, provided with new 100 per cent joints on creosoted ties fully tie-plated. All of the line except the Silverton branch and the main stem west of Plainview is ballasted with six inches of gravel from a pit about two miles south of the line near Quitaque, to which a spur was built. Passing tracks are 3,000 ft. long.

The gravel deposit developed for ballast is the only



Maps Showing General and Detailed Location of the Fort Worth & Denver South Plains

both the cut and embankment slopes must be protected from wash.

High Grade Roadway Standards

The roadbed on the new line has been given a width of 18 ft. on embankments up to 15 ft. high, being widened to 20 ft. on fills of 15 ft. to 25 ft., and increased to 22 ft. for fills of more than 25 ft. Cuts have a roadbed width of 24 ft. but the contractors were permitted to increase this to 34 ft. to accommodate the use of excavating graders, where these were employed. The slopes are $1\frac{1}{2}$ to 1 on fills and 1 to 1 in earth cuts,

one discovered anywhere within reasonable distances of the line and was not found until some time after construction had been started. Because of this and the further fact that no other material suitable for use as concrete aggregate was available within a reasonable hauling distance, no cast-in-place concrete was used on the line, although a considerable number of concrete and cast iron pipe culverts were installed.

All of the larger streams are crossed by open deck pile trestles constructed entirely of creosoted material. In the case of a few of the higher structures, pile bents



Cut West of Tampico, Showing the Characteristic Float Gypsum Rock Encountered in the Clay Formation

were replaced by frame bents set on pile sub-bents. The sizes of openings were determined almost entirely by the application of formulae to the acreage of drainage areas, as the territory is essentially one in which the maximum runoff results from "cloudbursts" and waterway requirements cannot be estimated from physical evidence.

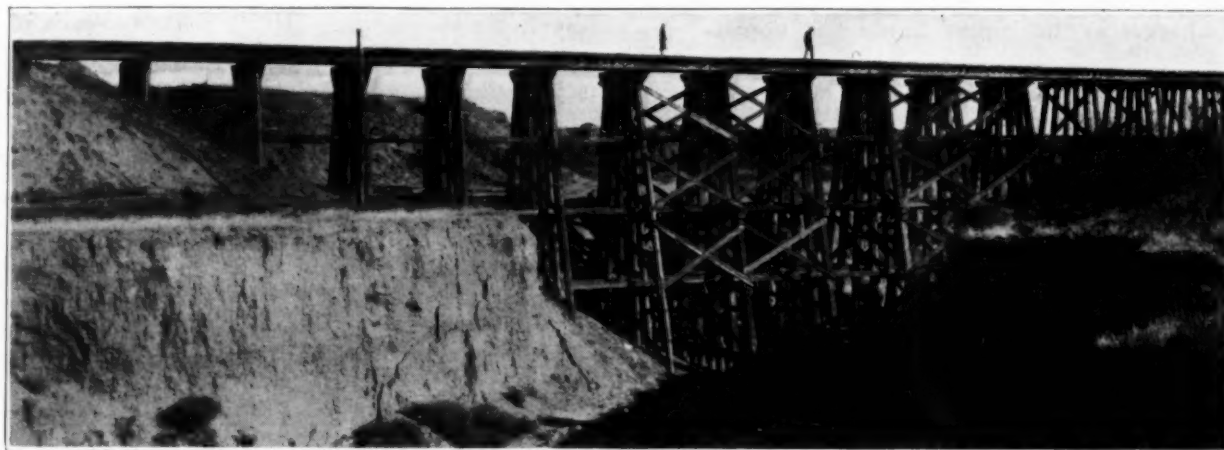
No Filling Trestles Built

Owing to the remoteness of the line from existing railroads no large capacity shovels or rail-haul equipment were employed by the contractors in grading

Beatrice, Neb., had Section 3, embracing the Plains work. Much of the work was done by sub-contractors. Roberts Brothers, Chicago, handled the track laying as a sub-contractor for both of the principal firms and all of the track laying was projected progressively from Estelline, where a large material yard was established.

Engineering Organization

The work was organized with exceptional thoroughness from an engineering standpoint. The entire project was under the direction of a construction engineer, with one division engineer for Sections 1 and 2 and



Typical Trestle Construction Across Waterways in the Central Plain Country East of Quitaque.—Note the Evidence of Marked Erosion

and owing to the lack of any local timber the fills were made without construction trestles. A considerable part of the work was done with tractor-propelled excavating graders. Motor trucks were used extensively in the handling of shovel excavation and largely replaced horse-drawn wagons in the grading outfits. The trucks were of particular advantage in making high embankments without the use of trestles because the rear dump feature permitted the embankment to be advanced at full height by dumping the trucks when backed up to the bank head.

Power Shovels

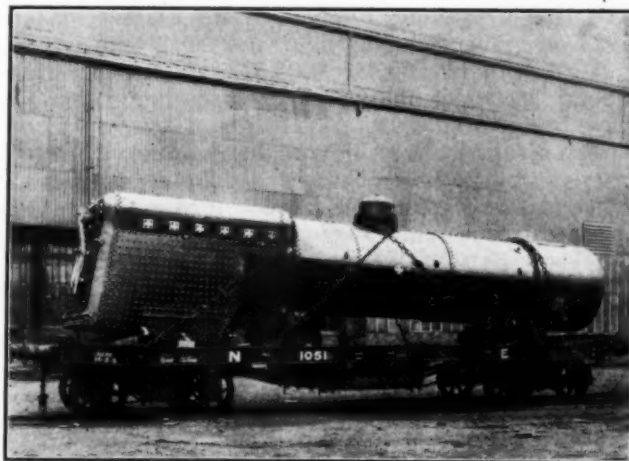
The power shovels were all of the small "whirly" type and while these excavating machines worked well in much of the material encountered, their use in loose and solid rock cuts necessitated more explosive in shooting and resulted in greater maintenance expense than would have been necessary if more powerful machines had been employed. Where the face of the hill at the ends of cuts was not too steep, the truck haul was materially reduced and the construction of roads from a top cutting was avoided by starting the shovel at grade and working it uphill at whatever grade was necessary to avoid an excessive depth of cut. After completing the first cut the shovel was backed up and started again at grade. The maximum haul on any part of the line was about 2,000 ft. As a rule, the cut and fill quantities were balanced, it being the policy to haul material from cuts a short distance beyond the point where borrow would prove cheaper.

Construction Organization

The construction of the line was divided between two firms of contractors. Peterson, Shirley & Gunther, Omaha, Neb., had Sections 1 and 2, or from Estelline to the head of the canyon, while Sprague & Nisley,

another for the Plains work, while the 207 miles of line was divided into 16 residencies. However, as all of the work, particularly on the Plains, was not covered simultaneously, it was possible to schedule the work in such a way that 11 parties were able to handle the 16 residencies. The project was directed from the headquarters of the Colorado & Southern at Denver, by R. C. Gowdy, chief engineer, and was under the general supervision of A. W. Newton, chief engineer of the Chicago, Burlington & Quincy. L. B. Furman, with headquarters at Quitaque, was engineer of construction, with E. H. Piper, division engineer on Sections 1 and 2, and W. S. Broome, division engineer on Section 3.

* * *



Special Flat Car of All-Steel Construction Used by the Sir W. G. Armstrong, Whitworth & Co., Ltd., Manchester England, for the Transportation of Locomotive Boilers

Transportation Charges in United States and Canada

WASHINGTON, D. C.

WITH the same governmental policy applied by the Canadian government to its railroads, with respect to subsidy and relief from taxation, the Class I railroads of the United States could have handled all grain, flour and meal, and livestock traffic entirely free of charge and still have retained annually \$43,332,826 more revenue than they did retain in the period 1923-1927, according to a study of "Transportation Charges in the United States and Canada" prepared for the Association of Railway Executives by C. S. Duncan and E. F. Bilo. This analysis of conditions affecting comparative freight rates in the United States and Canada was undertaken because of four resolutions introduced in the Senate during the last session of Congress, directing the Interstate Commerce Commission and other government bodies to investigate the status of rates in the two countries, particularly on agricultural products. Two of the resolutions are continuing in effect and call for a report at the coming session of Congress. The survey is said to be not intended as a criticism of methods or policy in either country and the result is described as "not in fact a comparison so much as a contrast between the two situations."

The primary purpose being to afford the basis for a clearer understanding of the conditions, the report of the survey shows not only the differences in conditions affecting the rate adjustment technically but also the extent to which the railroad policy of the Canadian government has influenced the level of rates, particularly in western grain, by shifting a large portion of transportation costs to the taxpayers. For example it is shown that the annual deficits incurred in the operation of the Canadian National Railways, borne by the government and the taxpayers, have averaged \$1,952 per mile of road for the period 1923-1927, while the average taxes paid by all Canadian roads have averaged but \$235.75 per mile of road, as compared with \$1,519.72 paid by the Class I roads of the United States. If the Class I roads in the United States were subsidized at the rate of \$1,952 per mile, the report shows, it would aggregate \$461,316,785, while the excess taxes paid in comparison with the Canadian average aggregates \$303,441,041, a total of \$764,757,826. The freight revenues received by the Class I roads in 1923 on grain, including flour and meal, and livestock totalled \$361,425,000, or \$403,332,826 less than the amount by which the Canadian roads may be said to have been subsidized.

The results of this study of the grain movement, the relative transportation charges in the two countries and other factors affecting the movement of grain, are summarized in a series of findings as follows:

1. The exportable surplus of Canadian grain, being not only relatively but also absolutely greater than that of the United States, holds a far more important and, in fact, a dominating position in Canadian export trade.

2. The factors affecting the movement of grain in Canada and in the United States, such as relative rail rates, competing water rates, ocean rates, other charges, methods of inspecting and grading, and port facilities and service, show—

(a) No influence in relative rail rates to cause a diversion to Canadian ports.

(b) No influence in relative water rates on the Great Lakes to cause a diversion of grain to Canadian ports.

(c) Rates and service through the Welland Canal from Buffalo to Montreal are a real factor in diverting United States grain to that Canadian port during the season of navigation on the Saint Lawrence River.

(d) Ocean rates and marine insurance rates give New York an advantage over Montreal during most of the year.

(e) Seasonal advantages account largely for the evident reciprocal movement of United States grain through Canadian ports and of Canadian grain through United States ports.

(f) Whatever advantages accrue to the exporter from differences in grading practices in the two countries are to be found in the "dockage" practices under the rules and regulations of the United States Department of Agriculture, which are said to offer some advantages to the United States exporter through having his grain regraded in a Canadian port.

3. Only in the Australian Customs Act can be found an element of influence tending to divert United States goods to the nearest Canadian border point.

4. With respect to freight rates, the conditions in Canada are very dissimilar to those in the United States, not only as between the bases of rates existing in the two countries, but also as to the reasons for these differences, and that it is really not proper to make any direct comparison of rates, particularly those applicable to wheat in western Canada, with those in the corresponding territory south of the international border.

5. The "Crows Nest Pass Agreement," entered into June 29, 1897, is the controlling factor in establishing rates on wheat from the producing areas in Western Canada to Lake Superior on movement eastward, and to the Pacific Coast on the movement westward for export.

6. The rates established by this agreement are statutory rates, not determined on the basis of fair and reasonable rates, but are, in the announced judgment of the Railway Commissioners for Canada, "not adequate to present conditions of traffic, and do not furnish an adequate return for the service concerned, and are not fair and reasonable, representing, as they do, but 55 per cent to 60 per cent of rates found adequate under present traffic conditions."

7. A similar element of statutory rates runs through the rate structure of eastern Canada, due to the National Trans-Continental Railway Agreement of 1903 and to the Act of the Canadian Parliament (17 George V, Chapter 44) assented to April 14, 1927, which states that the rates specified "shall be deemed statutory rates, not based on any principle of fair return to the railway for service rendered in the carriage of traffic."

8. The resulting rates in western Canada applicable to grain are obviously on a lower level, taking distance into consideration, than are those in the corresponding section of the United States.

9. The Canadian rate structure, both in western Canada and in eastern Canada, is the direct result of the Canadian governmental policy and it cannot be questioned that this policy has shifted to the Canadian taxpayer direct a burden of actual transportation costs in that country which is assumed directly by the rail carriers of the United States.

10. This shifting of the burden of transportation costs to the taxpayers has taken place in Canada—

(a) Through governmental financial guaranties.

(b) Through the assumption of deficits by the Dominion and Provincial Governments; and

(c) Through relief from taxes.

11. With the same governmental policy in respect to subsidy and taxes, Class I railroads in the United States could have handled all grain, flour and meal, and livestock wholly free of charge and still have retained annually \$403,332,826 more revenue than they did retain in the period of 1923-27.

12. The western roads could have handled the same farm products wholly free of charge and still have retained annually \$139,825,569 more revenue than they did retain in the period 1923-27.

13. In view of the fact that the revenues of the carriers in the United States, and particularly those in the Western Region, have fallen so far below the "fair return" provided for in the Transportation Act, 1920, even to suggest the application of the Canadian rates to the United States roads, without the Canadian governmental policy of subsidy and tax relief, is to demonstrate an absurdity.

14. Under conditions as they now are, no such rates could possibly be compensatory on the United States roads in the sense that they shall pay all out-of-pocket costs and leave a sufficient margin over and above for the payment of a fair share of over-head expenses together with a return on investment.

15. With taxes and operating expenses as they now are on the Northwestern roads, it would be impossible for them to reduce their rates to the level of Canadian rates without jeopardizing their solvency and without handling commodities for less than a compensatory rate.

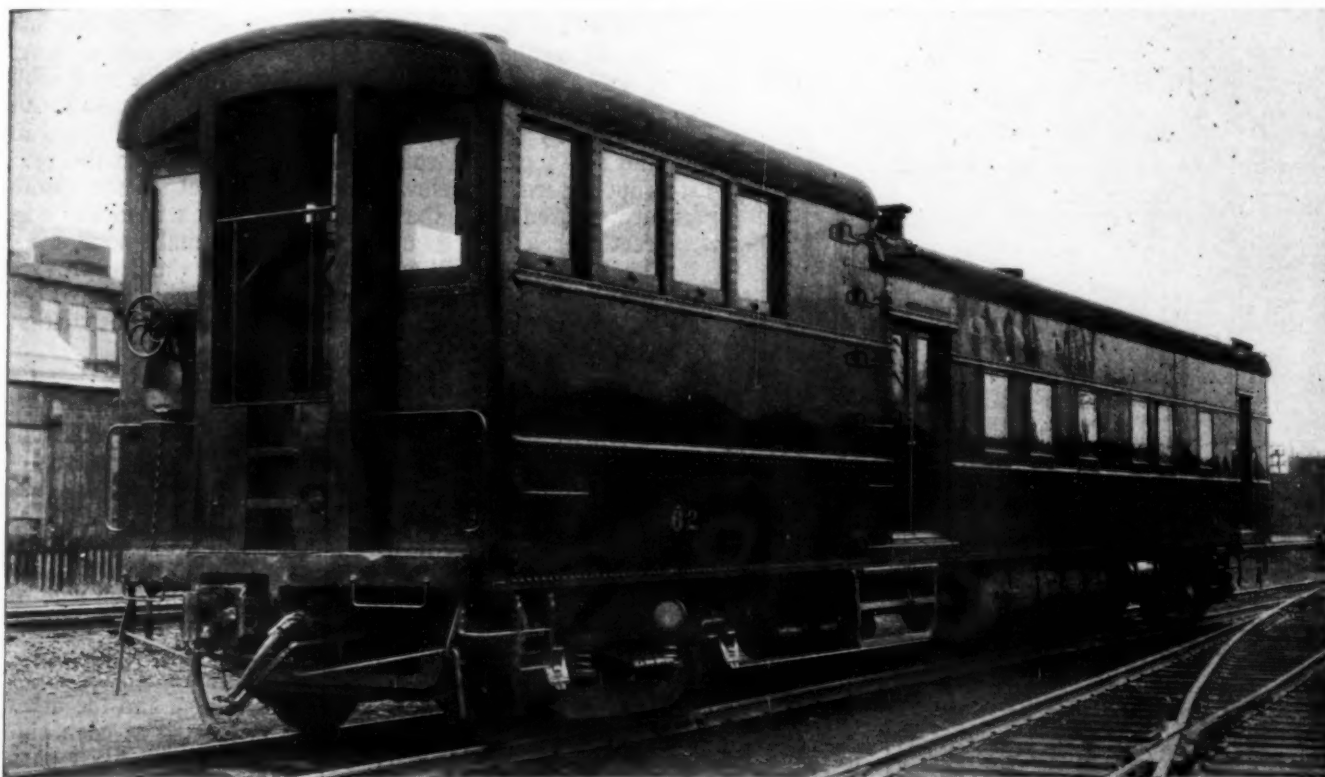
Canadian Pacific Builds New Dynamometer Car

Designed to withstand a drawbar pull of 500,000 lb. and a buffing shock of 1,250,000-lb.—Laid out to provide maximum comfort for the crew

THE Canadian Pacific has recently placed in service an all-steel dynamometer car built at its Angus shops, Montreal, and designed to withstand a drawbar pull of 500,000 lb. and a buffing shock of 1,250,000 lb. With many years of experience in the operation of dynamometer cars, the Canadian Pacific engineers have designed a car in which many undesir-

steel-tired wheels are used under the car. All of the wheels are fitted with clasp brakes except for the rear wheels of the front truck, on the axle of which is attached the recording paper driving mechanism.

The body of the car is built of steel. As the car will be used in freight service during the winter months, the insulation has been doubled over that used in passenger



The Cupola End of the Canadian Pacific Dynamometer Car

able features that existed in the previous cars have been eliminated and which also provides maximum comfort and convenience for a normal crew of four during and after working hours. The car is 60 ft. long over the end frames and weighs 145,000 lb., fully equipped.

The Underframe

As a car of this type must withstand severe service, it has been provided with an unusually strong underframe. This consists of two 58-ft. 10-in. side sills constructed of 11.6 lb., 3¼-in. by 5-in. by 3¼-in. by ⅞-in. Z-bars, and fish-belly center sills, 46 ft. 3¼ in. between truck centers. Top and bottom cover plates are applied to the center sill. The structure is rigidly tied together by two crossbearers, numerous cross-ties closely spaced, and adequate diagonal braces. In addition, many steel floor plates are riveted to the side sills and center sills to add stiffness to the underframe.

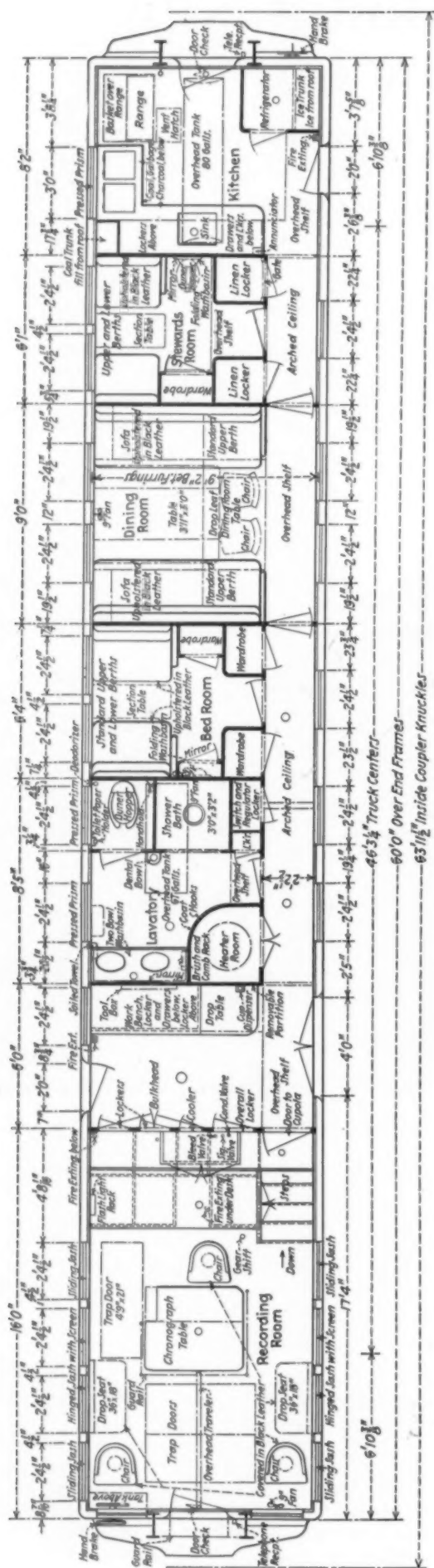
Two four-wheel Commonwealth trucks with 33-in.

car construction. Four-ply hair felt is used to line the inside of the car, including the roof. The sides of the car are covered with five-ply mahogany veneer. The veneer was used in preference to tongue and groove construction in order to provide greater warmth in the car and also to provide a smooth surface easy to clean. The surface of the veneer is covered with a filler, varnished and then rubbed to an attractive finish.

Roof Design

The roof is a modified turtleback design, made of wood and canvas covered. Hair-felt lining is used between the roof boards and the headlining, which is painted a cream color and trimmed with a neat stencil border.

Standard windows are used in the main part of the car. Each side of the cupola or recording room is equipped with two sliding and two hinged windows which can be quickly opened by the members of the car crew. Globe ventilators are located along the center



Floor Plan of the Canadian Pacific Dynamometer Car

line of the car, three in the cupola and two in each of the other rooms in the car. Hatch ventilators are used in the kitchen.

A Sub-Floor in the Cupola

In studying a number of existing dynamometer cars, the weighing head and the transmission unit were located in the recording room with the chronograph table. It was found that these two large units required considerable floor space and made it necessary for the crew to walk around them. To overcome this undesirable feature, a sub-floor was built in the chronograph room or cupola. The sub-floor is 3 ft. 1 in. above the main car floor and is supported on a steel frame. This floor consists of steel plates on which is laid $1\frac{3}{4}$ -in. flooring, covered with linoleum. The main floor beneath the sub-floor is surfaced with asphalt and the weighing head and the transmission unit rests on the steel end casting. The remainder of the main floor is of the standard passenger-car floor construction.

The chronograph table rests on a heavy casting attached to the Commonwealth underframe end casting. This casting brings the base of the table on a level with the sub-floor. The weighing head and transmission can be quickly reached either through trap doors located in the sub-floor or through two doors located in the rear cupola partition below the sub-floor level. These doors are entered from the work room, which is located directly back of the cupola and on the main floor level. They are furnished with non-breakable glass to provide natural light in addition to the electric lights located beneath the cupola floor. There is no wood construction of any kind beneath this floor.

The Interior of the Cupola

All of the recording instruments located in the cupola, or recording room, can be either operated or observed by the operator seated at the chronograph table. A door leads into the cupola from the front end of the car. A stub platform with a guard rail around it is built outside of this door. In addition to the guard rail, an electric light is located over the door. On each side of the door are two windows, back of which are located revolving leather upholstered seats. At each window are located three electric push buttons, one to call the steward, one for recording mile-post readings and the other for a track light, one of which is located at each side of the front truck. These lights occupy a fixed position on the truck. In addition a fan switch is located at the window on the left side and a platform light switch at the window on the right side of the front door.

Located over the door is the clock, the weighing head alarm bell, a duplex air gage and two relay blocks. The tank, which contains the glycerine and alcohol mixture for the weighing head is located above the front window at the right side of the car. This tank is filled from the roof. The weighing head can be lifted out through a trap door in the sub-floor by a $\frac{1}{2}$ -ton Harrington chain hoist which runs on a monorail attached to the roof frame inside of the car.

There are four windows on each side of the cupola, two that slide and two that swing. All of the windows in the recording room are furnished with curtains.

The chronograph table is located at the rear end of the recording room. An upholstered swivel chair is located back of the table.

In previous cars, ample desk room and drawers in which to place records and papers were not always provided. This deficiency has been overcome by building a

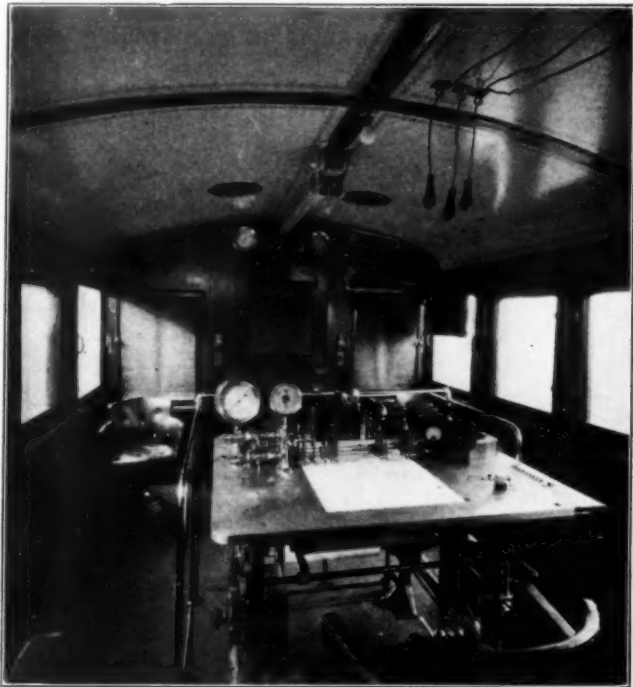
desk into the rear partition of the recording room. It has ample drawers above and below the desk for storage. A bleader valve, signal valve and conductor's valve are located in the cupboard directly above the desk. Colored cords run from these valves to a point directly over the operator's seat in front of the chronograph table.

It has always been a problem in previous cars to remove the chronograph table from the car when necessary. It is easily accomplished in this car by removing the partition into which the desk and cupboards are built. This partition is so designed that it can be quickly removed without destroying the finish of the car. The partition between the work room and the corridor is also removable so that the chronograph table can be taken out of the 4-ft. 1½-in. wide by 6-ft. 5⅛-in. baggage type side door located opposite the work room door.

A flight of three galvanized iron steps lead from the cupola to the main corridor of the car. These steps are covered with lead treads. A door containing a 15-in. by 21-in. glass panel leads from the recording room into the main part of the car. Thus, the recording room can be securely locked from both ends of the car.

Crew Housing Facilities

The work room, lavatory, bedrooms, dining room and kitchen have been laid out and equipped to furnish maximum comfort and convenience to the car crew. Each of the rooms is entered from a common corridor 2 ft. 2½ in. wide, that runs from the recording room to the rear end of the car. The corridor ceiling is of the arched design and paneled with agasote and painted a



The Chronograph Table Looking Toward the Front End of the Car

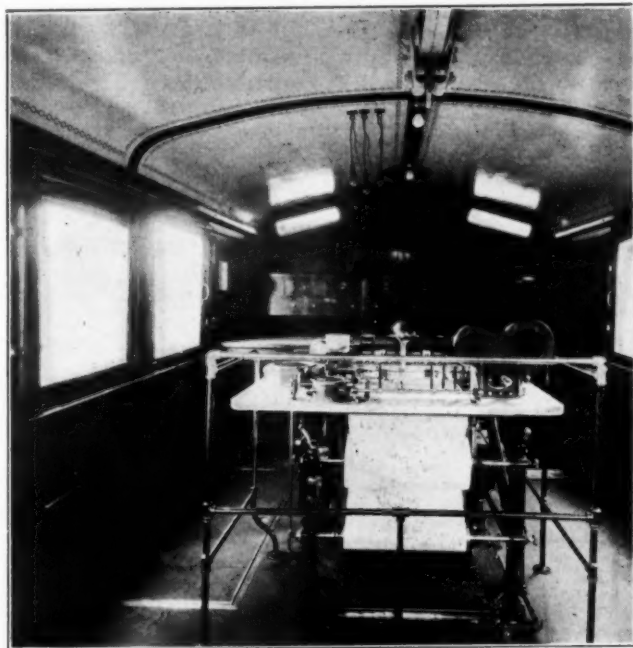
cream color. Adequate ceiling lights are provided. Three swinging doors are located in the corridor for the purpose of preventing kitchen odors from entering the dining room, bedrooms and the recording room.

The work room is next to the recording room. It contains a fixed metal-covered work bench 4 ft. 7 in. long by 2 ft. wide. A drop table 2 ft. 7 in. long is located at one end of the work bench. Beneath the work bench

are three drawers and a cupboard for tools and car accessories.

Another tool box is located directly above the work bench. Above this is a cupboard 5 ft. 6 in. long and 17 in. deep in which are stored two mattresses that can be used on the work bench and on the desk table top in the recording room in case of an emergency. Above the door leading into the work room is storage space for traveling bags.

Additional lockers are built into the removable partition between the recording room and the work room.



A Rear View of the Chronograph Table Looking Toward the Removable Partition at the Rear of the Cupola

A metal-lined, fireproof overall locker and two other smaller cupboards are built into this partition. All of the cupboards, drawers and doors throughout the car are provided with Yale locks.

A Shower Bath in the Lavatory

The lavatory, which adjoins the work room, is equipped with all of the conveniences found in the bath room of a modern home. It is 8 ft. 5 in. long by 6 ft. 10 in. wide. The shower bath, which is 3 ft. 2 in. wide by 3 ft. long by 6 ft. 6½ in. high, is provided with hot and cold water. A rubber curtain covers the 2 ft. 3 in. doorway. In addition to the 67-gal. (imperial) capacity tank located above the shower, a 165-gal. tank is located beneath the car floor. A water raising system is used to fill the other tanks in the car from the tank beneath the car floor.

The lavatory also contains two washbowls, a Duner hopper, a dental bowl, two mirrors and other accessories. A vertical row of five small cupboards and a large cupboard is built in the lavatory next to the door. The smaller cupboards are used by the crew in which to keep their toilet articles and the larger cupboard for odds and ends. An overhead shelf 3 ft. wide and 14 in. deep is located over the door and extends over cupboards. This shelf is used for storing spare batteries or luggage.

The Bedrooms

The main bedroom, which adjoins the lavatory, is 6 ft. 6 in. long by 6 ft. 10 in. wide. It contains a standard upper and lower berth. The two facing seats are upholstered in black leather. A section table can be

placed between the two seats and a desk lamp placed on it by plugging into a wall outlet. This room is occupied by the man in charge of the car and, by the use of this table, he has available an office closed off from the remainder of the car and in which reports and correspondence can be dealt with.

This room also contains a folding wash basin above which is located a 14 in. by 22 in. mirror, one wardrobe 10½ in. wide by 14 in. deep, and two other wardrobes 23¾ in. wide and 18½ in. deep on each side of the door. The latter are entered from the corridor and are used by the crew for overcoats and other wearing apparel. The floor of this room is carpeted.

The other bedroom, which is next to the kitchen, is used by the steward and is similar to the one described

two upper berths above the windows at the side of the car. Two ceiling lights are located in the dining room.

A 3 ft. 11 in. opening, without a door, leads into the dining room from the corridor. A swinging door is located in the corridor at each end of the dining room, thus closing this room off from the remainder of the car.

The Kitchen

The kitchen, which is located at the rear end of the car, is comparable with the kitchen of a private car. It is fitted with a standard official car coal range. This is partially covered with Monel metal and the rear vertical section beneath the warming oven is covered with white tile so that the stove can be easily kept clean. It is provided with a Monel covered sink and ample lockers and drawers. A large refrigerator, which is located in the left corner of the kitchen, is iced from the roof. The coal bunker is also filled from the roof.

How the Car Is Heated and Lighted

The car is heated by a hot water heating system, heat being obtained either by steam from the train line, or by fire in a coal heater in the car. The heater is located in the passage near the lavatory. In addition to the usual longitudinal heating coils, extra coils, surrounded by fins, are located in each room, and are regulated by radiator valves, independently of the main heating coils in the car.

Owing to the large amount of current required for a car of this type, it has always been found difficult to obtain sufficient battery capacity. To overcome this trouble, the car is equipped with a special low-speed axle generator so that it will cut in when the car is used in slow-freight service. In addition, a locomotive headlight generator set is located on the car roof. It is used to furnish light directly or to charge the batteries, by connecting to the steam line when a locomotive is on a freight train or by connecting to a steam line in the yard when the car is lying in at a terminal.

The Recording Mechanism

The car is furnished with a Burr weighing head, made by the Baldwin Locomotive Works, axle drive, transmission, chronograph table and dynamometer electrical system with modifications and changes based on the experience of the road in the operation of dynamometer cars. The weighing head has a capacity for drawbar pull of 500,000 lb. and a capacity for buffing of 1,250,000 lb. The buffing connection from the weighing head to the chronograph table, however, is not connected and buffing forces will not be recorded.

The jack screws for locking the weighing head lever in a central position are located in the head of the machine instead of in the head yoke, to permit the removal of the yoke without having to remove the pistons. The piston heads are supported by ball bearings. The fulcrum between the drawbar and the weighing head lever is fitted with roller bearings and also an Alemite lubricating attachment.

No changes of importance were made to the standard axle drive and transmission unit. The gears regulating the paper travel are arranged to give travels of ⅛ in., ¼ in. and 1 in. per hundred feet of car travel. The motor drive for the paper roll is arranged to give a paper speed of 3¾ in., 16 in. and 60 in. per minute. The distance timer is arranged to make automatic electrical contact for every 100 ft. of train travel.

All transmission levers, motor rheostat controls and switches for the entire apparatus are arranged so that



The Shower Bath and Lavatory—Individual Shelves for Toilet Articles Are Inclosed by the Narrow Door at the Right

above, except that it contains a Duner hopper, above which is a folding wash basin. The floor is covered with battleship linoleum. It has a wardrobe 15 in. by 24 in., and has an overhead shelf 6 ft. 1 in. long by 2 ft. 2¼ in. wide with a 1 in. metal rail running across the front. It also contains two linen lockers 22¾ in. wide by 2 ft. 2 in. deep, the doors of which are opened from the corridor.

The Dining Room

The dining room, which is 9 ft. long and 6 ft. 10 in. wide, is located between the two bedrooms. A large sofa, upholstered in black leather, extending the full width of the room, is located on each side of the dining room table. These sofas are used as berths and in addition, a standard upper berth is located above each of them. With the two chairs located at the end of the table, eight people may be served at one sitting. A wood shelf with a metal railing, extends between the

they can be controlled by the operator in the cupola without leaving his seat.

The speedometer drive, timer and paper-drive gear, usually located under the chronograph table, are arranged on the base casting, located under the cupola floor, with shafts extended vertically through the sub-floor to the connections of the table mechanism.

The Chronograph Table

The equipment carried on the chronograph table has been arranged so that all of it comes within the confines of the table, thus eliminating any part of the equipment from extending over the edge of the table. As may be seen from one of the illustrations, the portion of the table in front of the operator has been kept as free as possible from operating parts. All of the 16 recording pens are so arranged that a complete record is made on recording paper 18 in. wide. The fluid pressure gage and the Boyer speed recorder are located on the table instead of elsewhere in the car. New style enclosed Veedor revolution counters are mounted on the table.

The 12 pens in the front bridge bar include two six-second pens, a one-minute interval pen, distance-interval pen, a mile-post pen, a speed pen, one integrator pen, a drawbar-pull pen, a brake-pipe pressure pen, a brake-cylinder pressure pen and two extra pens. There are four datum pens back of the front bridge bar. These pens record the brake cylinder pressure, train line pressure, drawbar pull and the speed. All of the recording-instruments can be seen by the operator from his seat in front of the chronograph table.

A metal cover can be locked in place over the table, when it is not in use.

Method of Communication

Instead of the usual system of telephonic communication by a code system, this car is equipped with Laryngaphones, developed in England during the World War for use on tanks. The Laryngaphone is a noise-proof telephone and differs from the conventional telephone in that it is operated by the directly-applied mechanical vibrations of the larynx, or vocal cords, instead of by sound waves issuing from the mouth. The Laryngaphone transmitter is held against the side of the throat.

The headset type, which is used on this car, consists of a pair of ordinary receivers on a headband and a transmitter mounted on a strap which holds it in position against the throat, leaving both hands free. When speaking, an ordinary conversational tone is used. The vibrations of the larynx, through the walls of the throat, act on the transmitter and are reproduced as perfect speech in the listener's receiver, free from the interference of all outside noises.

The transmitters and receivers are connected in series in a two-wire circuit, without induction coils or condensers. The required current is obtained from a six-volt battery. This hook-up is used so that all of the observers can be addressed simultaneously. This equipment was secured from the Toronto representative of the Telephone Manufacturing Company, Ltd., of London, and is the first installation of this kind in a railway car on the American continent.

As this system of communication has eliminated the use of the code system of informing the chronograph operator from the cab as to the superheat temperature, boiler pressure, etc., a rubber stamp is used to place this information on the recording paper. The operator stamps the recording paper and fills in the information as the data is given to him over the Laryngaphone by the observer stationed in the locomotive cab.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading during the week ended November 17 amounted to 1,059,701 cars, an increase of 6,406 cars over the preceding week which was shared by all commodities with the exception of ore and l. c. l. merchandise. Loading of all commodities was larger than in the corresponding week of last year and the total was 91,649 cars higher. A decrease of 12,006 cars as compared with loading in the corresponding week of 1926 was due principally to smaller loading of coal and l. c. l. merchandise. Loading by districts was larger in every instance than a year ago. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

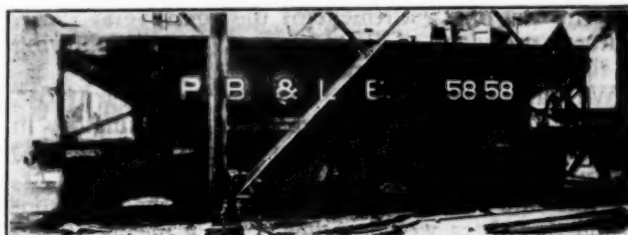
Revenue Freight Car Loading			
Week Ended Saturday, November 17, 1928			
Districts	1928	1927	1926
Eastern	237,124	219,988	245,993
Allegheny	219,369	193,685	223,310
Poconong	63,446	52,229	59,867
Southern	157,181	149,875	161,239
Northwestern	139,266	120,270	131,364
Central Western	154,439	151,750	159,773
Southwestern	88,876	80,255	90,161
Total West. Dists.	382,581	352,275	381,298
Total All Roads	1,059,701	968,052	1,071,707
Commodities			
Grain and Grain Products	52,809	46,479	42,685
Live Stock	35,481	35,033	33,713
Coal	198,870	186,330	243,014
Coke	10,794	9,297	12,722
Forest Products	64,684	59,568	65,794
Ore	37,265	13,054	27,612
Mdse. L. C. L.	260,047	260,005	264,442
Miscellaneous	399,751	358,286	381,725
November 17	1,059,701	968,052	1,071,707
November 10	1,053,295	975,134	1,106,889
November 3	1,103,342	1,039,075	1,131,832
October 27	1,161,976	1,112,816	1,288,878
October 20	1,162,095	1,129,055	1,200,941
Cumulative total, 46 weeks	46,134,263	46,619,887	47,670,584

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended November 17 totalled 83,159 cars, and showed the effect of the Thanksgiving holiday with a decrease of 10,355 cars from the previous week, but an increase of 5,655 cars over the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
November 17, 1928	83,159	39,945
November 10, 1928	93,514	39,810
November 3, 1928	95,266	42,301
November 19, 1927	77,504	33,309
Cumulative Totals for Canada		
November 17, 1928	3,274,371	1,820,953
November 19, 1927	2,990,670	1,719,795
November 20, 1926	2,879,776	1,723,485

* * *



Top—Hopper Car No. 5858 Coming Out of the Shop in 1897; Bottom—The Same Car 31 Years Later—This Car Has Been Included in the Permanent Exhibit of the Bessemer & Lake Erie at its Greenville, Pa., Shops

Western Wage Settlement

THE wage controversy between 55 western railways and their conductors and trainmen, which has been the subject of negotiations, hearings and conferences since July 16, was settled on November 23 when the employees accepted a 6½ per cent wage increase with no changes in working rules or conditions. This settlement is in effect identical with proposal No. 1 made by the emergency board in its report to President Coolidge on October 24. The increase is retroactive to May 1, 1928, and will remain in effect for a minimum period of one year from that date. The agreement was signed at Chicago on November 23 by J. W. Higgins, chairman of the Conference Committee of Managers of the Western Railways, E. P. Curtis, president of the Order of Railway Conductors and A. F. Whitney, president of the Brotherhood of Railroad Trainmen. The signing followed a meeting of more than 100 general chairmen of the two Brotherhoods at Chicago on November 19 and 20 and conferences with the Conference Committee of Managers on the three following days.

Immediately following the settlement, Mr. Higgins issued a statement in which he said in part:

"The wage settlement arose out of the report of the Emergency Board which decided that either a wage increase of 6½ per cent, with no change in working rules, or an increase of 7½ per cent, with the elimination of certain restrictive rules limiting the length and tonnage of double-header trains, would constitute a fair settlement of the dispute. The conductors and trainmen, through their Brotherhood officials, chose to accept the 6½ per cent wage increase without any rule changes.

"The decision affects approximately 42,000 road train service employees. The wage increase will amount to approximately \$6,500,000 annually. In this connection it must be remembered that the railway's original offers of wage increases to the conductors and trainmen, in response to their demands, were made solely because of the fact that the western firemen, by arbitration, and the western engineers, by mediation, had previously received wage increases of 6½ per cent. Under these circumstances it was considered unjust to deny corresponding increases to the conductors and trainmen who work with the engineers and firemen."

The brotherhood leaders expressed some dissatisfaction with the final settlement of the controversy. Mr. Whitney, president of the trainmen, stated, following the signing of the agreement:

"We have signed for an increase in wages of 6½ per cent. We believe this advance is discriminatory in view of the fact that it is lower than prevailing rates of pay in the East and the South. We decided to accept this rate of increase because we reached the conclusion that there was no other possible means of settlement of the dispute and because we did not wish to be a party to any step which might endanger the normal movement of traffic over the territory served by our employers.

"We were also moved to accept these terms to comply with the findings and suggestions of the emergency board of mediation which so readily and patiently endeavored to compose the difficulty. At the hearings before the emergency board we presented evidence which we believed proved the unsafeness of long train operation resorted to by the carriers. While no immediate action to correct this situation appears imminent we propose to continue our efforts to obtain legislation which will require the railroads to limit the number of cars carried in one train."

The principal provisions of the agreement are as follows:

1. The standard rates of pay per mile, per day and per month for conductors, assistant conductors and ticket collectors, train baggagemen, train flagmen and brakemen, in passenger service; the standard rates of pay per mile and per day for conductors and brakemen in local or way freight service, and for conductors and brakemen in through freight service shall be increased 6½ per cent. The existing rates per mile and per day for conductors and brakemen in work train service, shall be increased 6½ per cent.

In applying the 6½ per cent increase, the daily rates will be used as bases. Mileage rates will be determined by dividing the new daily rates by 150 and 100 for passenger and freight service, respectively. The new monthly rates in passenger service will be 30 times the new daily rates.

The same increases shall apply to milk, mixed, miscellaneous or any service not enumerated as are applied to the service in which they are not classified, it shall be increased in the same amount of money compared with rates in effect this date, as the freight or passenger rate, according to the overtime basis on which it is calculated.

All rates in excess of standard rates, including daily and monthly guarantees, and all mountain, desert or other differentials to be maintained; that is, the same amount of money now paid in excess of standard rates to be paid in excess of the standard rates which are herein agreed upon.

2. Train baggagemen required to handle United States mail shall be paid 34 cents per day more than the standard rate per day herein fixed for train baggagemen. The extra allowance for baggagemen handling United States mail will not apply when the amount of such mail handled does not exceed in volume, between any two points, that provided for the minimum space that can be authorized by the Post Office Department, viz, 3 ft. or its equivalent, 54 sacks or pieces. Loading United States mail into a car, storing it in a car, sorting it enroute, or unloading it at intermediate or terminal points will constitute "handling" under this rule. The extra allowance for handling United States mail will not apply when "storage" mail is in charge of the baggageman, provided he is not required to "handle" it. The extra allowance for handling United States mail by train baggagemen will apply to other trainmen who may be assigned regularly or temporarily to that work.

The settlement adopted the interpretations with respect to additional allowances for baggagemen handling United States mail which now apply on the railroads in the East.

Basic daily wage rates in the West prior to the increase were: Through freight conductors, \$6.16; through freight brakemen, \$4.84; local freight conductors, \$6.68; local freight brakemen, \$5.24; passenger conductors, \$6.70; passenger brakemen, \$4.70; train baggagemen, \$4.86.

* * *



From a Photo by H. Armstrong Roberts

Pressing Railroad Problems

Four important matters are now pending before the Interstate Commerce Commission and the courts

By F. J. Lisman
F. J. Lisman & Company

FROM the security holders' point of view, the four important railroad matters pending before the Interstate Commerce Commission or the courts are:

1.—The O'Fallon valuation case, about to go to the Supreme Court.

2.—Chesapeake & Ohio—The right of the directors to sell stock of this road at a fair price subject to the approval of the Commission, instead of at a price to be fixed by the Commission.

3.—The New York Central application to lease, for 99 years, its principal subsidiaries—the Michigan Central and The Big Four.

4.—The Great Northern-Northern Pacific merger.

Next in importance is the suit brought under the Clayton anti-trust law against various parties for acquisition of the Wheeling & Lake Erie and the M. K. & T. stocks, without prior approval of the Commission. In addition, there are many important cases pending before the Commission having to do with rates, divisions, right to construct, right to abandon, etc. etc.

O'Fallon Case and Rate Increases

The O'Fallon Case is before the court. Heretofore the Supreme Court has been very loath to overrule the Interstate Commerce Commission. If it should follow its previous decisions as to a fair return, as expressed in the Southwestern Bell and the Indianapolis Water cases, then the valuations of all the railroads would have to be increased by not less than 25 percent, or about $5\frac{1}{2}$ billion dollars in the aggregate. This would not necessarily mean that all rates would or could be advanced in order to pay a fair return on the additional valuation. If the Commission were to attempt to do this, the result would be that Congress would promptly interfere and probably annihilate the I. C. C.

While theoretically possible, practically it is impossible to advance freight rates to produce the additional 300 million dollars of net earnings which would be required in order to pay $5\frac{3}{4}$ percent on a $5\frac{1}{2}$ billion additional increased valuation. This sum would be equivalent to about a 7 per cent increase in freight rates all around, assuming that the additional rates would not cause a decrease in traffic.

A fair example of the difficulty of advancing freight rates is the rate situation in the Northwest. Wall Street's opinion to the contrary notwithstanding, the Commission has earnestly endeavored to lift rates in that section but found it impossible to do so on account of geographical competition and, yes, on account of political conditions! The political conditions are the Hoch-Smith Resolution which was passed to satisfy, or at least gratify, the farmers.

The rates on grain in the Northwestern states are about 50 per cent higher than similar rates across the line in Canada. It must be remembered, however, that the tax burden of the Canadian roads is less than one-sixth of that of the carriers of the U. S.—about \$236 per mile against an average of \$1520 per mile on this

side of the line, according to a recent study by C. S. Duncan and E. F. Bilo. Furthermore the capital charges of the Canadian lines are infinitely lighter on account of the great government help they received at the time of their construction. This help consisted of huge land grants, cash subsidies in aid of construction and government guarantee of interest on their bonds.

If the O'Fallon decision should be favorable to the railroads, it may be reasonably expected that if there be no rate advance, they will be allowed thereafter to keep whatever they can save in operating expenses. These savings, derived from hundreds of different sources, have averaged on the whole probably over 1 per cent of the gross earnings per annum and have hitherto all been passed over to the public in the form of lower rates, and to labor, by way of wage increases. Thenceforward the companies should be permitted to keep these savings, amounting to about 62 million dollars a year.

Chesapeake & Ohio Case

In the Chesapeake & Ohio case, the directors held that they had the right to offer their stockholders the privilege to buy about 600,000 additional shares of stock at \$100 per share, while the Commission held that this stock should be sold at \$150 per share. There was a vigorous minority opinion on this subject which protested against the principle of substituting the judgment of the Commission for that of a board of directors. The C. & O. has asked that the case be reopened, which has been done and it is now believed that the original plan of selling stock at par may be sanctioned by a majority of the Commission with a possible vigorous objection by a minority. No doubt after this particular matter is adjudicated, the C. & O. will come back to the Commission with a new consolidation plan, possibly again including the Erie as well as the Nickel Plate and Pere Marquette. The Van Sweringens who control these properties have recently acquired the Buffalo, Rochester & Pittsburgh, thus getting a wedge into the great traffic producing district of Pittsburgh. They want corporate consolidation in order to tie up the loose ends of their various lines and weld them together for the purpose of getting the maximum gross and net revenue. They are endeavoring to do just what the law says railroads shall do—that is, that carriers' properties shall be efficiently and economically operated.

New York Central Consolidation

The New York Central's application to lease The Big Four and Michigan Central looks fairly simple on the face of it. The New York Central owns 99.15 per cent of the Michigan Central stock and over 91 per cent of the Big Four stock. In effect these lines have been operated as part of one system for generations and not only logically belong together but it is not conceivable that they should be separated. Section 5 of the 1920 Transportation Act provides: "The Commission shall, as soon as practical and proper adopt a plan for the consolidation of railroad properties for Contin-

ental United States into a limited number of systems." This is a clear mandate that all railroads shall be included—the weak and the strong. The New York Central proposes to acquire only what it pleases and leave out the weak lines or what are generally known as the short lines.

Senator Cummins, one of the authors of the Transportation Act, in his speech to the Senate on January 21, 1920, said: "The object of consolidation, therefore, is to keep these roads (weak roads earning less than 4 per cent on the proper valuation) running without giving to the more fortunate railway properties excessive incomes. And I desire to remark here that I am not primarily interested in the capital which has been invested in these unprosperous railroads. I would not willingly do any injustice to that capital, but no matter what happens to any capital, the railroads must be kept in operation, and not only in operation but in efficient operation."

Commissioner Meyer, in the case of the application of the C. & O. to merge with Erie and Nickel Plate, had the following to say about the three lines: "One of the chief criticisms of the unifications which have been proposed or suggested has been that certain of them do not embrace related weak lines, although the union of the weak with the strong lines is one of the ends which Congress apparently had most definitely in mind. When these unifications are being considered the problem of the short lines whose property in the public interest should be included in the systems proposed cannot be overlooked if it is possible to include them upon reasonable terms. In this instance little or no consideration was given to the short line connections of the lessor companies in the preparation of the plan, but on the contrary, as has been pointed out, it is proposed to leave out some of the weaker units of the Erie. It is apparent that such a policy nullifies one of the intentions of Congress in enacting this legislation. Every applicant should assume the burden of making reasonable provision in its plan for the possible incorporation of every connecting short line now in operation in the territory covered or to be covered by the proposed grouping or unification. No branch line or short line now in operation within the territory in question should be left out of the consideration unless by affirmative testimony the abandonment of operation of such line or its omission from the plan has been justified."

There is no reason to doubt that the Commission more or less still holds this view. In the New York Central consolidation case, nine short lines have intervened, wanting to be included in the merger on fair terms. The State of Michigan has also intervened because it wants the New York Central to include the Alpena, Ausable & Northwestern Railroad, running through a thin district in the northern part of the Lower-Michigan Peninsula, on the plea that this district would undoubtedly revert to a wilderness if the track of the railroad were taken up.

The nine roads which intervened are not the only ones to which the Commission must give attention. The Transportation Consolidation Act was passed, not in the interest of any given set of railroad security holders, but in order to give approximately equal transportation facilities to the people throughout the United States, the same as they have comparatively equal mail facilities.

There are 72 short lines connecting with the New York Central System and the Commission must see that the shippers on these 72 lines, insofar as they are entitled to it, are permanently assured of adequate

transportation facilities to and from their natural markets. A majority of these 72 lines also connect with other systems. The Commission, therefore, is confronted with the wearisome and unpleasant duty of deciding to just what system each particular line should be allocated. This must be determined from the public's point of view although, undoubtedly, the Commission would welcome the activities of the systems in acquiring the weaker lines; possibly even over the protest of other systems.

In the New York Central case some rather important minor railroads are involved. For example, a bare majority of stock of the Rutland Railroad is owned jointly by the New Haven and the New York Central. The policy of the two owners concerning the Rutland Railroad has clashed at times. Some of the commissioners are convinced that the Rutland Railroad should be permanently allocated to either one of the two lines.

In Michigan there is the 319-mile Detroit & Mackinac Railroad which should either belong to the Pere Marquette or the Michigan Central.

In a number of cases, electric railroads doing some freight business want to receive benefits of the Consolidation Act. So far no precedent has been set by the Commission in this problem.

If the Commission is going to hold hearings on the allocation of the 700 short lines, and this is clearly what it should do under the Act, it will have no time for many other important matters. In order to adjudicate this situation, it would seem that the Commission must come to the conclusion to serve notice on the systems that they should acquire connecting short lines at fair prices within a given time—say a year—and that, failing to do so, the matter of a fair price will have to be submitted to arbitration or decided by the Commission. Of course the first few cases of arbitration will set a precedent for many others and will thus simplify matters.

There is no power under our Constitution to make an unwilling buyer buy something at a price which he deems too high, nor an unwilling seller dispose of something at a price which he deems too low.

Fixing of Divisions of Revenue

In order to carry out the full intent of the Transportation Act, the Commission will probably be compelled to act quite arbitrarily in fixing the division of revenue on business interchanged between strong and short lines. This it has the right to do under the act. Of course, the right to fix divisions is equivalent to the right to fix values. The Commission used this authority in the case of the New England roads when it gave them an increased division of the through rates between New England points and points west of the Hudson river. This action of the Commission in fixing increased division kept the New England roads out of bankruptcy which is asking to be included in the New York Central restored the shrinking values of the stocks of these companies.

Another very interesting case is that of a railroad which is asking to be included in the New York Central merger. That is the Ulster and Delaware Railroad which operates 128 miles of road and penetrates the Catskill mountains in New York State. This railroad carries a large amount of milk for the New York market—in fact it is probably the only railroad in the country whose earnings from milk are about as great as those from all other freight. Owing to automobile and bus competition it lost about 70 per cent of its passenger earnings in the last eight years. Inasmuch as

the Commission found the road was a necessity to the adjacent communities, it rearranged the divisions on milk and passenger traffic between the Ulster & Delaware and the New York Central, and allotted to the minor company, out of earnings interchanged with the New York Central, an amount of about \$100,000 per year. This enabled the Ulster & Delaware to earn about 2½ per cent on its I. C. C. physical valuation. Again the Commission, by fixing reasonably adequate divisions, created a fundamental value for securities and thus receivership was avoided.

In the southwestern part of the country, the Kansas City, Mexico & Orient, a 750-mile line was about to be abandoned a few years ago, but the Commission came to its succor by increasing divisions on through freight. The line was kept going and the shippers in the adjacent communities were protected. Since then a huge oil field has been discovered along this railroad and the company was recently acquired by the Atchison, Topeka & Santa Fe for about 14 million dollars, while but a few years ago it did not seem as though it were worth the 2½ million which the Government had to advance it during the war in order to keep it alive at that time. Undoubtedly these precedents, with their very constructive results, are bound to be followed in many cases.

Great Northern—Northern Pacific

The request of the Great Northern-Northern Pacific for merger, is more or less in the same state as that of the New York Central, plus the additional problem that a paragraph in the law about consolidations states: "In the division of such railways into such systems under such plan, competition shall be preserved as fully as possible and wherever practicable the existing rates and channel of trade and commerce shall be maintained." On the other hand, the law also states: "In the exercise of its power to prescribe just and reasonable rates, the Commission shall initiate, modify or establish and adjust such rates so that carriers as a whole (or as a whole in each of such rate groups or territories the Commission shall from time to time designate) will, under earnest, efficient and economical management and reasonable expenditures for maintenance of way, structure and equipment, earn an aggregate annual net railway operating income, equal, as nearly as may be, to a fair return upon the aggregate value of the railroad property of such carriers, held for and used in the service of transportation."

By consolidation of the Great Northern and Northern Pacific railways which compete with each other between their terminals and many intermediate points, several millions undoubtedly will be saved in operating expenses and this would tend to greater efficiency and economy in accordance with the law.

In this case the matter of competition is the major question and the short lines are not so important; neither are there any bankers' profits to be paid to anyone. In many of the suggested eastern and southwestern consolidations, bankers' profits have cut a very important figure.

It is now nearly nine years since the Transportation Act was passed. In the meanwhile many precedents have been set and many situations have become clarified. The Commission, grossly overworked as it is, has been endeavoring to side-step the short line problem. It has also repeatedly notified Congress that the mandate for consolidation, contained in the Act, is almost unworkable, but Congress has taken no action although several amendments, in accordance with this recommendation have been introduced.

Commissioner Hall was largely in charge of consolidation problems. He has been succeeded by Commissioner Porter on whom the same problem of carrying out the mandate of Congress for consolidation has been inflicted.

About five years ago the Commission agreed upon a tentative plan of consolidation and gave due publicity to it in accordance with the law requiring notice to the governor of each state. The law reads: "After the hearings are at an end, the Commission shall adopt a plan for such consolidation and publish same; but it may at any time thereafter upon its own motion or upon application, reopen the subject for such changes or modification as in its judgment will promote public interest." While the Commission has hoped it may be relieved of this arduous duty, it is probably the opinion of the majority of the commissioners today that it is obligated to carry out this provision of the law and therefore a new consolidation plan may be expected which will include all lines. Such a plan does not necessarily have to cover the country as a whole, at one time, but it can be promulgated by sections. Quite likely the Northeast, which means the section east of Chicago and St. Louis and north of the Ohio and Potomac rivers will be taken up first.

Recently the heads of the four big eastern systems were in conference with some of the commissioners, as they had been asked to cooperate in this perplexing situation, but the result of the conference was superlatively negative. There was even no indication of their arriving at anything like a "Kellogg Arbitration" agreement or a disarmament agreement of any kind.

Consolidation is indeed a knotty problem and obviously cannot be brought about hurriedly.

Train Service in Kansas Is Restored After Flood

PASSENGER and freight service on railroads operating south and southwest of Kansas City, Mo., which was seriously interrupted by overflowing rivers on November 16, 17 and 18, had been restored to normal on all but a few branch lines on November 25. Estimates of damage to railroad property on individual lines varied from \$10,000 to \$125,000, while in many cases transportation expenses were increased during the period of high water. While there was serious, temporary interruption to traffic physical damage to railway property was comparatively light.

In Kansas City and the surrounding territory rain fell steadily for 36 hours, starting early on the evening of November 15, and the total precipitation during that period as recorded by the United States Weather Bureau at Kansas City was approximately 6.25 in. The Blue river which empties into the Missouri river at Kansas City, was unable to carry this rain fall and overflowed into the Blue valley industrial district. At Vanora, Kan., the total precipitation was 7.38 in., while at Saffordville, Kan., the precipitation was 5 in.

Water overflowed the St. Louis-San Francisco tracks in Swope Park, which are used jointly with the Kansas City Southern, on November 16 and at its highest stage water covered the tracks to a depth of 14 ft. at that point. Tracks of the Kansas City Southern were under water from a few inches to as much as 6 ft. in the Blue valley district. The water reached its crest and began receding shortly before noon on Saturday,

November 17. By working track forces all that night the line was opened for traffic early the following morning. Some additional delay resulted due to soft track but by Sunday afternoon trains were moving over all of the washout territory on the K. C. S.

The high water was general in Kansas City territory and all detour routes were closed on either November 16 or 17. In order to take care of passenger traffic the Kansas City Southern made arrangements to end passenger runs at Grandview, 23 miles from the Kansas City Union station. By means of a fleet of buses, passengers, mail, express and baggage were transported between Grandview and Kansas City for one day until the track could be made ready for use. Freight traffic was also delayed during the same days and regular schedules were resumed on November 18. The K. C. S. continued handling passenger and some freight trains of other railroads until November 25. Damage to the track structure of this railroad was estimated at \$10,000 while transportation expenses were increased about \$5,000.

The Atchison, Topeka & Santa Fe experienced difficulty with high water on its Chicago-Kansas City main line at Floyd, Mo., which forced the detouring of trains around Kansas City by way of Topeka, Kan., on November 17 and 18. The Santa Fe lines most severely damaged by overflowing rivers were the Ottawa (Kan.)-Gridley branch which was out of service from November 21 to 23, the line from Winfield, Kan., to Florence, portions of which were out of service from November 16 to 23 and the line from Chanute, Kan., to Emporia, which was out of service for eight days, from November 16 to 24. Other Santa Fe lines where service was interrupted for from two to three days between November 16 and 24 included those between Independence, Kan., and Wellington, between Arkansas City, Kan., and Newton, between Coffeyville, Kan., and Chanute, and between Wellington and Elinor, Kan. At the height of the flood in Augusta, Kan., the floor of the passenger station was covered with 3 ft. of water and at the same point the Santa Fe pumping station burned while surrounded by flood water.

The Missouri-Kansas-Texas lines between Parsons, Kan., and Kansas City, between Parsons and Junction City, Kan., and between Sedalia, Mo., and Parsons were considerably damaged and service was interrupted,

beginning on November 16 on the Kansas City division. The principal trouble was caused by the Marais des Cygnes river near Bangor, Kan., and the Neosho river near Chanute, Kan., and Council Grove. Service on the line between Sedalia and Parsons, was abandoned on November 18 when the Osage river washed out the track between Schell City, Mo., and Rockville and the Grand River made the track impassable near Clinton, Mo.

Service on the Kansas City division was completely restored on November 20 and partial service was restored on the Neosho division on November 26 though at that time several thousand feet of track were still under water. A large portion of the track over which it was impossible to operate on the Katy was under water for several days and was subjected to a very swift current. Considerable track and bridges were washed out and repairs were being made and service restored as fast as the water receded. In certain streams the water was the highest in the history of the railroad. It was expected that flood damage on the Katy would reach \$125,000.

Practically all lines of the Missouri Pacific, south and southwest of Kansas City were out of service sometime during the high water. These included the lines between Pleasant Hill, Mo., and Carthage, between Kansas City and Independence, Kan., between Fort Scott, Kan., and Garnett and between Coffeyville and Arkansas City. In most instances on the Missouri Pacific, difficulty was experienced with high water at points where no previous trouble from that source had ever been encountered.

From 4 ft to 8 ft. of water covered the tracks of the Chicago, Burlington & Quincy between Hannibal, Mo., and Palmyra Junction, between Palmyra Junction and Quincy, Ill., and between Quincy and Hannibal, interrupting service for from two to five days and causing about \$20,000 damage.

Washouts caused by flood water were reported at three points on the Chicago, Rock Island & Pacific on the line between St. Louis and Kansas City. High water at Pleasant Hill, Mo., Hadsell and Leeds Junction on Nov. 16 made it necessary to detour trains on other railroads until Nov. 20. Damage to physical property was estimated at less than \$10,000.

* * * *



On the Quebec Central



In the Stationery Storehouse on the M-K-T

Purchasing Officers Discuss Trade Practices

W. B. Storey speaks on carrier's buying power—Exponents of clean business strike at price cutting and unethical conduct

A WARNING to business that the great buying power of the railways is threatened by public apathy to falling earnings and that both buying and selling to industry must be put upon a higher plane to avoid economic waste, was sounded in addresses before the Purchasing Agents Association of Chicago on November 6, by W. B. Storey, president of the Atchison, Topeka and Santa Fe, by W. W. Nichols, assistant to the president of the Allis-Chalmers Manufacturing Company, Milwaukee, Wis., and by G. A. Renard, secretary and treasurer of the National Association of Purchasing Agents.

The railroads, Mr. Storey brought out in discussing the railway problem, have in the aggregate, a great buying power, which is vital to the stability and welfare of industry and of the country as a whole, but this buying power is being severely threatened by the continued nibbling at rates in the face of declines in some branches of the railway business. Business and the public must understand, he pointed out, that this nibbling must be curbed or railway buying and spending for operations and improvements must necessarily be reduced in keeping with the smaller revenue transportation is getting with which to do business.

In the opinion of Mr. Nichols, the standard of buying and selling, while on a higher plane than formerly, must be elevated and cleansed more thoroughly of bad trade practices if economic losses are to be reduced and industry and business in general are to be saved

from restrictive legislation and government intermeddling, like that with which the railroads have been saddled. He pictured the age as an era in which co-operation implies more than merely working together. It must also embody, he asserted, the idea of service that will contribute to general welfare and square with the demands of enlightened public opinion. Transactions and conduct that countenance the cutting of prices by sellers below the costs of production, juggling of bids, and other unfair practices by purchasers are inconsistent with the requirements of the age and merely cause economic ills from which neither sellers nor purchasers can escape. Simplification and standardization programs should be particularly fostered by sellers and purchasers as a means of promoting economy, and efforts should also be expended to reduce the cost of bidding, in the opinion of Mr. Nichols, whose remarks are reproduced in part as follows:

Whenever a business man serves well an industry of which his particular enterprise is a part, in the long run he serves his enterprise most. Conversely, any action he takes contrary to the general welfare reacts, sooner or later, to his distinct and usually greater disadvantage. The success of any seller is distinctly the concern of the purchaser to whom he sells, and what is more, the success of the seller is of greatest consequence to the ultimate success of the purchaser. So little thought is given to this by the purchaser, that he often applies unintentional, but none the less active

opposition to his seller's efforts to supply the requirements he demands.

Price Cutting Bad

Needless price cutting always works to the ultimate disadvantage of the instigator, who is usually the purchaser. When the latter's agent, whoever he may be, employs questionable tactics to that end, he unwittingly inflicts on his own employer, their costly effects in more ways than one. When his tactics involve misleading statements he is simply obtaining valuable consideration by false pretenses, and when he pits competing sellers against each other to serve an ulterior purpose, he not only abets an offense against the public well-being, but degrades public morals and from the consequence of that he cannot escape. The seller, on his part, must realize that by committing economic offenses, he will usually become a victim of circumstances which he himself may have created. Many manufacturers are beginning to suspect that the practices of purchasers, which they have been denouncing so vigorously, are only the natural results of their own acts.

Any seller who accepts orders which cause him losses, can only remain in business by making up the losses in future transactions. He does this, of course, by increasing overhead charges, which will be unavoidably included in his future estimates. If the machinery industry, for example, is not given the profits its enterprise requires it cannot advance, for after paying the necessary returns on investment, there will be too little left for that progress in engineering, improvement in design and effectiveness necessary to the purchaser's own needs. In other words, hard-driven bargains by the purchaser, force the seller to stint his product and lack of profits not only precludes development of the art, but chills initiative and makes impossible of attainment the best the selling industry is capable of providing. The purchaser thus suffers from the type of competition he himself provokes.

We must rely on business executives, who, comprehending the effect of such abuses on their own enterprises, will direct and support their purchasing agents in overcoming them. The purchasing agent's peculiar status in sales negotiations makes him the essential factor in abandoning injurious purchasing practices. Nothing can be accomplished without his leadership. His initiative in the matter is vital. He will be in a position to force the issue and therefore it is essential that he be convinced of the wisdom of his course. In this respect, he becomes a keystone in the great arch of industrial stability.

I am an advocate of firm bidding as the remedy for price cutting. Firm bidding is ample enough,—the only difficulty lies in its application. One thing is certain, success can only accrue as the result of an intelligent, hearty and far-seeing co-operation of the two parties to each proceeding, the seller and his customer. If purchasing agents generally, with executive approval, shall adopt this practice, which a few have already proven to be fair and equitable to all concerned, it will more than compensate them for any individual losses they feel they would otherwise sustain. Firm bidding, as distinguished from judging bids, can be trusted to reap all the benefits claimed for it.

The conspicuous results attained by the simplification and standardization program of the Department of Commerce, also merits high praise and thoughtful consideration in connection with all purchasing. The vast sums saved and the wasted effort released for greater

uses by the simplification plans of nearly one hundred industries accrue to the benefit of all. There must have been a wanton waste of national resources, when it was possible to reduce varieties of brick, metal fixtures, chinaware, and other commodities anywhere from 50 per cent to 97 per cent.

Multiple Tenders Costly

Another problem calling for present consideration in commerce is the effect on economic well-being of an indiscriminate introduction by purchasing agents, of unnecessary competition in certain fields. Competition is the life of trade, but excessive competition leads to exhaustion, and causes great economic losses. A survey of six typical American industries undertaken several years ago, under Herbert Hoover's direction, disclosed a preventable waste in multiple tenders ranging from 29 per cent to 64 per cent, or an average of 46 per cent. From these findings, Mr. Hoover estimated that multiple tenders, according to the American practice, involve an economic waste to American industry, of probably ten billion dollars per year. The preparation of bids on a new development recently made by several large competing manufacturers involved an average expenditure of \$30,000 each. Only one obtained the order. The question naturally arises, who pays ultimately the \$60,000 expended by the other two? This amount must be absorbed in future transactions, to be carried by subsequent customers. This is but one example. Multiply this by the thousands of similar cases occurring annually in this one industry, then multiply this by the number of American industries similarly affected, and we get a rather convincing check on Mr. Hoover's deduction.

Our chief need in present business is a high moral understanding—an instinct with a moral courage to follow its dictates. In accomplishing this, executive leadership is essential for then the subordinates are bound to reflect that attitude in executing policies. The quality of present business administration has already given pre-eminence to American industry, and it is not difficult to believe that our better business stability and its success can be attributed largely to the marked improvement in business conduct, but it must be enlarged upon to meet our more exciting economic conditions and needs.

* * *



Exhibit of the Texas & Pacific at the Recent State Fair of Texas, Held in Dallas

Illinois Central Looks Ahead

Improvements in Chicago terminal and on line, already beneficial, insure continued efficiency and economy as business increases

PRESIDENT L. A. Downs of the Illinois Central in a recent interview called attention to the fact that Chicago suburban traffic of this road is now one-third greater than it was prior to electrification. Electrified operation began in June, 1926. Train service was accelerated and greatly increased. This change, together with the avoidance of smoke, had the effect of making the territory served by the road increasingly desirable for residence and business and its development has been rapid. An operating deficit from steam operation of this service, which averaged well over a half-million each year prior to 1926, has been eliminated and in its place is a substantial showing of net. To electrification, however, the entire credit for all this improvement cannot be ascribed; there was an increase of 20 per cent in rates in 1926.

It might also be noted that owners of real estate in Illinois Central suburban territory have probably benefited financially from the electrification far more than has the railroad which, of course, had to meet the entire expense of the improvement. On the whole, however, when a seemingly constant deficit can be definitely replaced with net operating income and when gross earnings are steadily rising in a situation where the law of increasing returns is operative, the outlook for the future is most promising. The road must be congratulated for surmounting a major handicap in the continued success of its operations.

Electrification also has had a by-product which may in time become important; to wit, the development of "air rights" over the freight terminal between Randolph street and the Chicago river. The tracks in this 64-acre area will be electrified by 1930 and contracts have already been made for one air-rights building of 75 stories in this zone, which adjoins the congested Loop district. If a substantial portion of this area should enjoy a similar development there would be considerable increase in non-operating income as well as, probably, an important new source of traffic.

Operating revenues and expenses of the Illinois Central (including the Y. & M. V.) for the first nine months of 1928 as compared with the same periods in 1927 and 1926 follow:

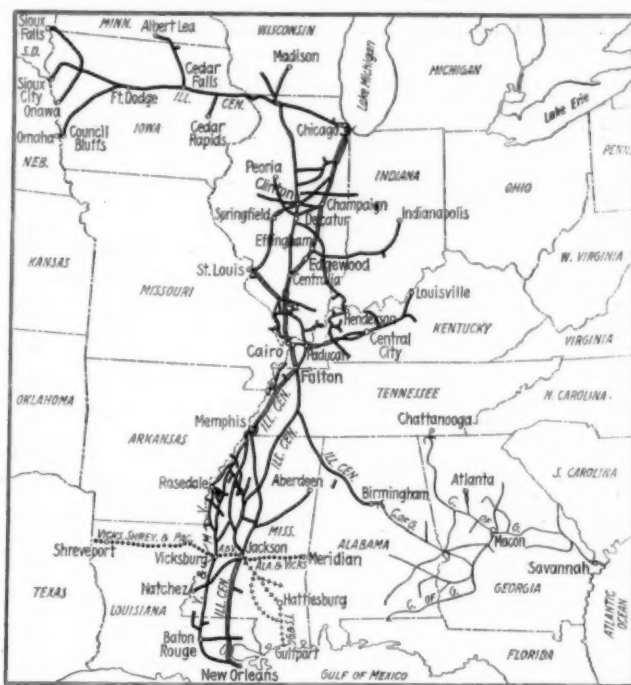
	1928	1927	1926
9 Mo. Gross.....	131,793,509	136,749,796	139,237,476
M. of W. Exp.....	17,178,923	18,296,622	20,811,660
% of Gross.....	13.0	13.4	14.9
M. of E. Exp.....	30,708,988	31,039,737	31,222,909
% of Gross.....	23.3	22.7	22.4
Trans. Exp.....	47,751,922	48,628,298	48,838,996
% of Gross.....	36.2	35.6	35.1
Total Oper. Exp.....	102,952,161	105,243,641	107,899,398
Oper. Ratio.....	78.1	75.5	77.5
Net Ry. Oper. Income.....	19,393,731	20,625,201	21,162,298

It will be seen from the above that the road's gross income has not been as high in the first nine months of the current year as it was in the same period of either 1926 or 1927. Operating economies were effected, but not quite enough to counteract the entire decline in gross, so that the nine months' net railway operating income this year was slightly less than in the same period of both 1926 and 1927. Cumulative operating statistics for the first eight months (the latest available) show gross ton-miles and net ton-miles 4.8 per cent and 8.2 per cent lower respectively than in the similar period of 1927. Compared with the first eight months of 1926, that period this year shows gross ton-miles 0.8 per cent higher

and net ton-miles 2.8 per cent lower. Freight revenues for the first eight months of the current year, meanwhile were 3.2 per cent lower than in the same period of 1927 and 3.8 per cent lower than in that period of 1926.

Estimated net for October this year is \$2,659,000—an increase of about \$920,000 over the same month last year. Should November and December show like increases the road's net for 1928 should be substantially above that of 1927.

The Illinois Central has brought its operating performance up to a high level of efficiency which has been steadily maintained. The efficiency of its transportation



The Illinois Central

machine is attested to by its average daily car mileage—43 for the first eight months of the current year. Average train speed was 13.7 m. p. h. during the eight-month period. Other selected operating statistics for the first six months of 1928, compared with the same period of 1927 and of 1926, are shown in Table 1.

Major improvements, in addition to the Chicago electrification, which have been completed recently include the new shops at Paducah, Ky., (described in *Railway Age* of August 6, 1927, page 256) and the Edgewood cut-off (*Railway Age*, October 6, 1928, page 653). This 168-mile line saves 22 miles on through business and provides a maximum grade of 0.3 per cent as compared with 0.8 per cent by the through line formerly used. The cut-off also draws traffic away from several congested points, including single-track river crossings, and will not be subject to interruption by severe floods.

Investment Increased One-Third in Six Years

The Illinois Central has been a leader in the adoption of modern improvements designed to effect operating economies. It was one of the first railroads in the

country to install car retarders in its large yards. It has signaled both tracks on busy sections of double track for

Table 1—Comparison of Selected Freight Operating Statistics

	First Eight Months		
	1928	1927	1926
Mileage operated.....	6,663	6,555	6,555
Gross ton-miles (thousands).....	26,924,287	28,288,127	26,700,415
Net ton-miles (thousands).....	11,153,166	12,144,373	11,470,908
Freight train-miles (thousands).....	15,416	16,076	15,484
Freight locomotive-miles (thousands).....	15,845	16,580	15,957
Freight car-miles (thousands).....	672,778	701,519	668,542
Freight train-hours.....	1,121,817	1,230,271	1,197,356
Car-miles per day.....	43.0	42.6	41.6
Per cent loaded to total car-miles.....	61.9	61.9	63.7
Per cent loaded to total train-miles.....	61.8	61.9	63.7
Net ton-miles per car day.....	712	738	714
Freight cars per train.....	44.7	44.7	44.2
Gross tons per train.....	1,747	1,760	1,724
Net tons per train.....	723	755	741
Train speed, miles per train-hour.....	13.7	13.1	12.9
Gross ton-miles per train-hour.....	24,001	22,993	22,299
Net ton-miles per train-hour.....	9,942	9,871	9,580
Lb. coal per 1,000 gross ton-miles.....	129	127	132
Loco miles per loco, day.....	74.7	76.6	75.3
Per cent freight locos unserviceable.....	12.1	12.4	12.2
Per cent freight cars unserviceable.....	7.1	6.1	4.2

either-direction operation. Its total expenditures for additions and betterments in the six years, 1922-27 inclusive, were \$204,000,000, which compares with a total in-

Table 2—Illinois Central Operating Results, Selected Items, 1924 to 1927

	1924	1925	1926	1927
Total operating revs. \$173,838,132	\$173,838,132	\$178,169,625	\$186,632,490	\$182,967,560
Total operat'g expenses 134,024,921	134,024,921	135,382,527	143,119,862	141,921,644
Net operat'g revenues 39,813,211	39,813,211	42,787,099	43,512,628	41,045,916
Railway tax accruals 12,722,493	12,722,493	12,729,951	12,344,721	11,889,965
Ry. operating income 27,033,816	27,033,816	30,018,803	31,120,465	29,102,232
Hire of freight cars—				
Dr. bal. Cr. 295,580	295,580	1,168,392	2,182,624	3,081,364
Net railway operating income 28,102,073	28,102,073	29,926,943	30,194,551	27,176,952
Dividend income 1,214,722	1,214,722	1,214,722	1,714,722	1,715,186
Total non-operating income 3,577,826	3,577,826	3,623,813	4,540,606	4,372,979
Gross income 31,679,900	31,679,900	33,550,757	34,735,157	31,549,931
Rent for leased roads 1,758,575	1,758,575	1,770,246	2,384,587	2,787,226
Interest on funded debt 12,922,536	12,922,536	13,609,364	14,525,000	15,947,105
Total deductions from gross income 15,431,342	15,431,342	15,999,014	17,584,758	19,418,060
Net income 16,248,558	16,248,558	17,551,743	17,150,399	12,131,871
Dividends on preferred stock 1,276,740	1,276,740	1,486,332	1,569,909	1,393,143
Dividends on common stock 7,876,286	7,876,286	8,587,961	8,977,801	9,182,324
Earnings per share on common stock \$13.39	\$13.39	\$12.86	\$12.06	\$8.13
Total revenue tons carried 55,615,045	55,615,045	58,207,077	61,893,432	63,301,448
Bituminous coal, tons 17,604,948	17,604,948	18,899,141	21,378,139	22,593,848
Per cent coal of total tons 31.66	31.66	32.47	34.54	35.69
Revenue ton-miles (thousands) 14,284,712	14,284,712	14,891,945	15,779,569	16,121,240
Revenue passenger-miles (thousands) 970,793	970,793	966,350	954,302	953,290
Rev. per ton-mile, cents 0.924	0.924	0.921	0.919	0.886
Transportation ratio 36.47	36.47	35.07	34.63	35.6
Operating ratio 77.10	77.10	75.99	76.69	77.5

* * * *

vestment in road and equipment and in securities of affiliated companies of \$615,000,000. The company has plainly, therefore, prepared itself to give efficient service to the growing requirements of its patrons. Being thus prepared in advance for the expeditious movement of heavy traffic, it should be able to handle a growing business without proportionate increases in operating expenses.

The earnings per share of common stock in 1927 were \$8.13, being greatly reduced from the average by the extraordinary expenses due to the floods. For the seven years prior to 1927, earnings per share of common stock averaged \$12.50, or 1.8 times the regular \$7 dividend. At the end of 1927 the company had out-standing \$154,583,946 of stock (85 per cent common) and \$372,135,670 of long term indebtedness. Its corporate surplus stood at \$86,564,402.

Diversified Traffic

The Illinois Central, as would be expected in the light of the territory it serves, has a well diversified traffic—12 per cent agricultural products, 48 per cent products of mines, 13.6 per cent forest products, 20.9 per cent manufactures. Since 1921 the proportion of agricultural products to total tonnage has decreased, while that of manufactures has increased. The road originates 60 per cent of its tonnage and had an average haul in 1927 of 255 miles. In May of the current year reduced rates on steel products from Chicago to Gulf points were placed in effect with the purpose of improving the competitive position of producers of these commodities in this territory. Should these rates stimulate trade to the extent anticipated the Illinois Central should secure a good share of the resulting tonnage.

The Illinois Central with its highly developed plant has in recent years seen the growth of a competitor in the government-owned and operated Inland Waterways Corporation. The attitude of the railroad toward the development as expressed in 1923 by C. H. Markham, then president and now chairman of the board of the Illinois Central, has been one of co-operation to permit accurate determination of the economy and practicability of waterway transportation on the lower Mississippi. Mr. Markham expressed the opinion that should such operation prove a success, the railroad ought not be prohibited from itself operating a water line on the river in co-ordination with its rail services.



Boston & Maine's "Flying Yankee" at North Andover, Mass.

E. J. Pearson Resigns New Haven Presidency

Retirement to become effective December 31, after which he will remain active with the company in an advisory capacity

EDWARD J. PEARSON, president of the New York, New Haven & Hartford since May 1, 1917, will retire from that position on December 31. The announcement of Mr. Pearson's resignation because of ill health was made following a meeting of the New York, New Haven & Hartford board of directors in New York on November 26. He will, however, remain active in an advisory capacity.

Coming to the New Haven in 1916 as vice-president in charge of operation, construction and maintenance, Mr. Pearson, after nine months in this position, was chosen to succeed the late Howard Elliott as the road's chief executive when the latter relinquished the position in which he had directed the launching of plans for rehabilitation of the property.

Born at Rockville, Ind., in 1863, Mr. Pearson has been in railway service for more than 40 years, first entering the employ of the Missouri Pacific as rodman upon his graduation from the engineering department of Cornell University in 1880. He was next employed in the engineering department of the Missouri, Kansas & Texas and in 1883 became assistant engineer on the Northern Pacific. Two years later he was appointed supervisor of bridges, buildings and water supply of that road's Minnesota and St. Paul divisions. In 1890 he was appointed division engineer of the Eastern division of the Northern Pacific and after another two years was further promoted to the position of principal assistant engineer at Chicago, in charge of construction work of the Chicago terminal lines and the Wisconsin Central terminal, then being operated by the Northern Pacific.

In 1894 Mr. Pearson entered the operating department of the Northern Pacific to become superintendent of its Yellowstone division and in the following year was transferred to the superintendency of the Rocky Mountain division. Three years later, in 1898, he was appointed superintendent of the Pacific division and in 1902 was promoted to assistant general superintendent. Returning to the engineering department in 1903, he was made acting chief engineer and in the following year

became chief engineer. Leaving the Northern Pacific in 1905, Mr. Pearson was then appointed chief engineer of the Chicago, Milwaukee & Puget Sound, which corporation built the Puget Sound extension of the present Chicago, Milwaukee, St. Paul & Pacific. Upon the completion of this latter work in 1911 he went to the Missouri Pacific, as vice-president in charge of maintenance, operation and construction. After serving in this position four years he became vice-president of the Texas & Pacific in charge of all departments. He had held this latter post about a year when he accepted the

vice-presidency of the New York, New Haven & Hartford.

Upon assuming the presidency of the New Haven, Mr. Pearson was confronted with the difficult task of carrying out the rehabilitation plans launched by his predecessor, the late Howard Elliott. In his statement at the time Mr. Pearson's appointment was announced, reported in the *Railway Age* of April 27, 1917, Mr. Elliott, after outlining the progress which had been made during his own four years as head of the property, listed the following problems as remaining for his successor:—

The adoption of a plan for handling the road's floating debt and for obtaining new capital for improvements.

To dispose of the so-called "Outside Properties" (which must be sold under the federal decree)

at a minimum loss, and use that money for improvements or paying debts.

To obtain rates that will enable the company to meet the steadily increasing wages and the increasing prices of materials, and the serious conditions imposed by the war.

To perfect every detail of management of the organization and of the property so as to save the maximum amount of money.

To spend from earnings or from new capital enough money in the next five years to modernize the plan and make it adequate to the needs of New England.

To provide better working conditions resulting in substantial economies, in the hope of paying a return to the shareholders.



Edward J. Pearson

How adequately these problems have been solved under the leadership of Mr. Pearson is indicated by the fact that in February, 1928, the New Haven finances had reached the point where the directors were able to declare a special dividend of one dollar on the common stock of the company. This payment, made on April 10, was the first return received by New Haven common shareholders since December, 1913. While this April common dividend disbursement was listed as a special payment and thus did not establish the security as a regular dividend payer, there have been nevertheless disbursements of a like amount in each succeeding quarter of the current year, the latest being declared at last Monday's meeting following which Mr. Pearson's retirement was announced.

Problem of Post-War Deficits

The 1916 annual report of the New Haven, issued a short while before Mr. Pearson became president, showed gross revenues of \$85,640,365 which had grown to \$139,824,315 by the end of 1927. The real achievement of the Pearson regime, however, came after 1919 when the New Haven management for each of five years was confronted with a deficit after charges. This deficit, which was \$877,060 in 1919, reached \$14,121,623 in 1921 and then fell to \$4,865,768 in 1922 and to \$2,917,106 in 1923.

This latter was converted in 1924 to a \$2,998,650 surplus and the recovery which culminated in the special dividend disbursements in 1928 was well under way. In the year 1925 a net after charges of \$7,418,252 was reported, while this figure was increased to \$8,243,112 in 1926 and further increased to \$10,432,661 in 1927.

No announcement was made as to Mr. Pearson's successor, but the board of directors, after accepting the resignation, appointed a committee to choose a new president of the road before Mr. Pearson's resignation becomes effective on December 31.

Younger Railroad Men's Conference

WASHINGTON, D. C.

THE sixth annual Younger Railroad Men's Conference, held under the direction of the Transportation Department of the Y. M. C. A., met at the Mayflower hotel, Washington, on November 21-23. There were 340 delegates in attendance, accompanied by 41 railroad officials, 72 secretaries of railroad Y. M. C. A.'s and 18 state and national secretaries. Fifty-three railroads were represented in the attendance of delegates, the largest delegation from a single system being that from the Pennsylvania, from which there were 50. The 1928 conference officers were: President, L. L. Lee, Louisville & Nashville; vice-presidents, H. C. Leftwich, Chesapeake & Ohio, and E. J. Quinn, Illinois Central; secretaries, C. J. Lunden, Pittsburgh & Lake Erie, and Arthur F. Haight, Union Pacific.

The Washington Terminal Railroad Department Y. M. C. A. acted as hosts, with B. R. Tolson, manager of the Washington Terminal Company, as chairman. After the conference was opened by President Lee greetings from Washington were extended by J. L. Ferguson and F. J. Bresnahan, of the Terminal Company, and William Knowles Cooper, general secretary of the Washington Y. M. C. A. George K. Roper,

senior secretary of the Transportation Department of the Y. M. C. A. outlined the purposes of the conference, and a report was given by C. J. Lunden and C. C. Robinson of the meeting of the conference officers and advisory committee held in Cincinnati, September 26-27.

After an address on "Railroading as a Life Work" by Alexander S. Lyman, general attorney, New York Central, the delegates were divided into about 30 groups, each under the leadership of a railroad official and a Y. M. C. A. secretary, for informal conferences and counsel on questions relating to the present occupations and ambitions of the young men, finding one's place in the world of work, home relationships and the place of idealism or religion in life. Each of the young men was furnished with a vocational blank on which he was asked to check the kind of work he is now engaged in, what he would like to be ten years from now, and why. These were studied and classified by the leaders and later used as the basis for individual counsel in group meetings.

At the evening session on November 21, Judge Adrian Lyon, chairman of the general board of the Y. M. C. A.'s in the United States, addressed the delegates on "Fitting Yourself for Life's Task". On November 22, in addition to the group meetings, the delegates were received at the White House by President Coolidge, who also posed with them in for a group photograph. Later they were taken on a sight-seeing trip through Washington and to Mount Vernon and Arlington National Cemetery, where Dr. John P. Munn, chairman of the transportation department of the national council, and Mr. Roper placed a wreath on the tomb of the Unknown Soldier.

The conference dinner was held November 22, B. R. Tolson presiding. The speakers were: Dr. John P. Munn; E. J. Quinn; R. V. Massey, vice-president, personnel, of the Pennsylvania; Roy V. Wright, managing editor, *The Railway Age*; and W. Spencer Robertson, president of the national council Y. M. C. A., and secretary of the American Locomotive Company.

At the concluding session on November 23, there was an address by Henri Johannot, fraternal delegate from the World's Committee, Y. M. C. A., Geneva, Switzerland. Reports were presented by the committees on findings, credentials and resolutions, and C. C. Robinson addressed the conference on "The Meaning of the Conference Now and In the Days to Come."

Officers for the ensuing year were elected as follows, and each delegate being asked to vote for four men of those placed in nomination and the nine receiving the highest number of votes being designated as the new officers: President, Norman Stewart, 20 years of age, a machinist's apprentice on the Michigan Central at St. Thomas, Ont.; first vice-president, Arthur Strickland, a clerk on the Atlantic Coast Line at Florence, S. C.; second vice-president, G. Cammarn, a timekeeper on the Chesapeake & Ohio at Columbus, Ohio; first secretary, J. Keith, a clerk on the Illinois Central at Chicago; second secretary, Charles Gordon, a machinist's apprentice on the Delaware, Lackawanna & Western at Scranton, Pa. Members of the advisory committee are: E. Freyer, a machinist's apprentice on the Pennsylvania at Canton, Ohio; J. B. Reese, machinist's apprentice on the Missouri-Kansas-Texas; G. Wallace, train service clerk on the New York, New Haven & Hartford; and Charles McPeck, a carman on the Erie at Matamoras, Pa.

Accounting Hearings Closed

I. C. C. will serve tentative reports--N. I. T. League witness brings federal settlements into question--League queried on entrance into case

THE Interstate Commerce Commission's hearings in Docket Nos. 14,700, 15,100 and *ex parte* 91, the telephone depreciation case, the railroad depreciation case and the revision of railroad accounts case, respectively, were closed on November 26, following sessions held on November 24 and 26. Commissioner Eastman announced that the commission would prepare tentative findings in all three cases and serve them on the interested parties after which briefs could be filed.

Opening the railroad depreciation case, Assistant Engineer Dansey, valuation department, Atchison, Topeka & Santa Fe, testified regarding accounting for depreciation of ties. He stated that complete data were kept only on experimental sections, one to each operating division. The next witness was S. V. Reeves, valuation accountant, Atchison, Topeka & Santa Fe, who testified in part as follows:

At the October hearing in Docket No. 15,100 I testified that in restating to the retirement and replacement basis other track material applied in renewal and charged to operating expenses, we confined the restatement to eight major classes of items, but due to variations in sectional weights and types these eight major classes of items involved the listing and pricing of two hundred eighty-four separate kinds of items. The question was asked how many kinds of items we would have had to list and price if we had restated all the items of other track material.

I cannot give an answer in the manner contemplated by the question. However, in determining the eight major classes we tabulated all the other track material applied in renewal on one valuation section during a six-year period. The tabulation consisted of 1,070 entries. An entry may be for one frog bolt, a single switch point, one guard rail, or 1,000 pounds of spikes; 492 or 46 per cent of the entries covered material within the eight major classes and represented 79.6 per cent of the total money involved. The remaining 578 entries or 54 per cent covered material outside the eight major classes and represented 20.4 per cent of the total money involved. These 578 entries covered parts of complete units, for example, parts of a switch, such as a single switch point, a slide plate, or a connecting rod; parts of a frog, such as frog bolts or frog plates; parts of a joint such as a channel bar, base plate, or wood filler, parts of a switch stand, such as switch locks, switch lamps, or switch lamp forks; nut locks; tie plugs; and rail anchors. It can easily be imagined that the variety of items would be almost infinite.

It seems quite safe to conclude that had the restatement been made for all items of other track material applied in renewal the number of items to be listed and priced would have been more than double the number we did list and price.

Following Mr. Reeves, H. K. Dougan, assistant general auditor of the Great Northern, testified on the minimum amount of property which should be considered "a unit of property" in the classification of investment in road and equipment.

At the opening of the hearing in *ex parte* 91, Commissioner Eastman placed in the record a statement from the public service commissions of Washington and Oregon in which they took certain exceptions to the testimony of L. R. Bitney at the October hearing in this case. These commissions indicated their idea of the changes that should be made in the accounting rules. E. R. Woodson, of counsel for the Railway Accounting Officers Association, objected to the introduction of this communication, but the objection was overruled by Commissioner Eastman who added, however, that counsel might file written interrogatories if they so desired.

J. W. Roberts, author of the cost accounting plan being sponsored by the National Industrial Traffic

League, took the stand and answered some of the specific criticisms made by railroad witnesses. Continuing he said:

A glaring example of the ineffectiveness of present methods of accounting for maintenance, and, as I view the matter, a positive proof that managements of the particular properties which these gentlemen represent, do stand in aid of further aid and assistance from the accounts and their accountants, is to be found in the case of the settlements made with the director general of railroads at the end of federal control.

In view of what the chief accounting officers of the carriers have said in this record it is well to consider the following facts which are taken from Exhibit No. 30 in Docket No. 15,100, which is the 1924 report of the director general of railroads.

Settlements Under Federal Contract Cited

The witness here singled out several roads, officers of which had testified in the present case, and quoted their claims against the director general for adjustment following federal control, comparing the claims with the actual amounts for which settlements were made. He emphasized that these claims were made under oath.

Commissioner Eastman interposed a question: Did the witness think that claims made for trading purposes really showed a lack of information? The witness answered:

The preparation of these claims was under the requirements that they had to be sworn to, and, if I remember rightly, there is a very definite form of oath that has to be taken respecting them, setting out in considerable solemnity that they are just and true claims which have not been previously in any part covered by settlement, and are justly due from the government to the corporations, and it seems to me that injecting strategy into such a matter for the purpose of facilitating the negotiation is rather an unethical thing. We might at least say that much about it. As I understand it, those things are supposed to be based upon recorded facts.

Ethical, Moral or Accounting Deficiency?

Commissioner Eastman remarked that these illustrations might show accounting deficiencies or they might show ethical deficiencies. The witness replied:

Yes, or moral deficiencies, if you please. Now, I am giving the gentlemen the benefit of the doubt in that matter, and I am saving their veracity for the sake of their accounting ability and the inadequacies of the accounts. I haven't quite gotten to that.

Continuing Mr. Roberts said:

The federal control settlements provided the first occasion in history for fairly testing the efficiency of American railway accounting as it is practiced, and virtually in its entirety. Its miserable failure to supply the common every-day facts about railway operation, maintenance, construction, traffic and earnings actually cost the railway corporations nearly three quarters of a billion dollars as the result of 26 months of federal operation—unless we impugn the motives, professional judgments and accounting abilities of those who prepared the claims and made oath as to their correctness.

These settlements were, or should have been, an accounting matter, pure and simple. The managers of the properties were responsible to their stock and bondholders for the settlements made. They had a right to rely upon the accounts to give them the facts needed for settlement. Surely had the accounts functioned in their office it would have greatly aided managements in enforcing their claims.

The facts concerning the accountancy involved in the federal control settlements are of public record. Their testimony contradicts all assertions that present accounting practice is sufficient to the purposes of efficient management and economical operation of the railway properties, and for that reason

the Commission is respectfully requested to take judicial notice of them in this case, as well as in the case of Docket 15,100.

Railroads Charged with Misuse of Accounts

So long as the carriers are permitted to make charges for repairs, renewals, depreciation, retirements, and for changes incident to additions and betterments, to operating expenses under accounting which consists of the simplest, most unilluminating form of bookkeeping, we can see no opportunity for the truth respecting the current costs of furnishing service to be uncovered, because maintenance charges under such accounting practices can and we believe are used at times to serve the selfish ends of the carriers where the question of service charges are involved.

I wish to enter a blanket denial of the implications which may be found by reading the accounting officers testimony, to the effect that difficulties have been glossed over in my presentation and practical problems of application have not been considered. The plan as finally submitted represents nearly a year's work on the part of my associate, Mr. Mudd, and myself, together with the assistance of other members of my staff whose experience has been along mechanical and engineering lines. We endeavored in every way to exhibit our recommendations as clearly and yet as briefly as possible, and we felt that we could be brief because we were laying the matter before informed minds.

Offers to Work Out Details of Plan

The purpose of these remarks is to assure the Commission that the alternative plan has been constructed out of practical considerations, so far as they were known to and could be ascertained by its builders, and if the Commission should desire it, I stand willing and able to complete and submit the plan's specifications in any or all particulars as may be desired, including texts for the individual accounts; to recommend specific bases for dividing the different common and joint expenses, and, if it be necessary to pursue the matter to such lengths, to furnish the specifications under which the necessary facts of expenditure and performance can be gathered from their respective sources. Thirty years practical experience in railroad and other work leads me to say in all seriousness that the use of such a plan of accounting on the railways, while fraught with difficulties and local problems, is in my judgment entirely feasible, and the difficulties can be surmounted and the problems solved in practical and economical ways which will satisfy reasonable minds, and that the situation which would attend its adoption and use is not nearly so serious either in cost or effort, as the testimony of the accounting officers would lead the uninitiated to believe.

Mr. Burchmore, of counsel for the N. I. T. League, then asked the witness whether he had discussed the details of his plan with the members of the league's railroad accounting committee and he replied in the affirmative.

Commissioner Eastman asked whether it were not true that the difficulty of any plan of cost accounting was the apportionment of costs of service in common and whether this were not true also of cost studies. The answer being in the affirmative, the Commissioner then asked whether as an approach to the problem it might not be desirable to undertake a research into the question of apportionment of various common expense items; and whether, furthermore, such an investigation might not throw "practically complete light upon the practicability of cost accounting." This question being answered in the affirmative, the witness continued:

Seeks Change in Shop Accounting

The Traffic League's committee on railway accounting rules has requested me to make it clear in this record that we consider that all expense of whatever nature which, according to cost accounting principles as generally applied, is attributable to work done in railway shops should be accounted for as a part of the cost of that work, and that this is true whether the work be in the nature of repairs, or in the nature of new construction. I am also requested to make it plain that this has been our position from the beginning and has in no way been modified. The reason for this position is that unless such expenses are incorporated in the cost of the product of the shops there is no possible way by which all of them may find their way to the proper place in the classified accounts or in the cost of service accounts.

The railway accounting officers have pointed out that in my testimony I admitted that we did not provide a system of accounting for manufacture in railway shops. That is quite true, and it is apparent that to have made such a provision at this time, when there is no intimation that the work and time entailed would serve a useful purpose, would be both presumptuous and foolish. It is to be noted, however, and if it is not perceivable I shall be glad to point it out, that the alternative plan as presented does provide for lodging all expense incident to shop operations against the individual shops, regardless of what they may be used for. If this is done, it was a reasonable presumption that the expenses would flow out with the product of the shop and inevitably so.

As to the internal methods employed in costing the product of shops the league has no particular suggestions to make other than that it should be done in a fair and reasonable way. There are numerous methods available, no one of which would probably be suitable for every railroad shop in the country. The needs of the general situation seems to call for a job-cost system, and presumably that system would answer in most cases. An examination of B. & O. forms supplied for this record by Mr. Ekin indicates that a job-cost, or shop order, system is now used in B. & O. shops. Mr. Fell has testified that such a system is in use in certain Pennsylvania railroad shops.

If depreciation accounting is eventually prescribed which recognizes natural service life as a factor and requires that changes therein shall be accounted for through the depreciation reserve or otherwise, it may be that in that event a condition now prevailing will be remedied about which we would otherwise complain.

Present classifications disregarded the factor of extended service life expectancy as a betterment which should be accounted for as a capital investment. The result is that improvements which are permanent, or quasi-permanent, may be and are charged to operating expense and subsequently claimed by the carriers as elements of invested values for which the net yield of rates is expected to provide a fair return.

Accounting for Service Life of Ties

A notable case is that of track ties. Under present rules any kind of a tie save a metal tie may be used in replacement without involving a charge to capital, and as a consequence the average service life of the tie structure has been greatly increased solely at operating expense by using treated and other ties of superior quality and greater cost in the renewal of inferior ties displaced. The additional service life is thus provided wholly at the rate of payers expense, while the increased value of the tie structure is claimed and we believe, allowed, in the valuations found for rate-making purposes which would tax the rate payer with interest upon sums he had previously paid. An interesting case of this kind appears in Exhibit No. 60 introduced by Witness Mayo, in Docket 15,100, which shows that since 1914, when present classifications became effective, the average life of ties in all tracks on the Southern Pacific System has increased from 9.20 years to 13.1 years, or 33 per cent. This means that one-third of the service value existing in the tie structure on the Southern Pacific System at December 31, 1926, has been paid for out of operating expenses. We know of no way for the Commission to avoid allowing rate-making value based on this service value if occasion arises, which would tax the rate payer with a fair return on this value. We believe that similar situations may be found on all of the large roads in the country.

Several questions were raised and answered with reference to accounting for greater service value in ties. When the witness mentioned the Santa Fe as a road which secured information of the character desired in so far as test sections were concerned, questions brought out the fact that, on such test sections the work was supervised by an engineer and not left to the section foreman. Commissioner Eastman wanted to know whether it would be practicable to provide such supervision over an entire road and the witness replied that it was not so much a question of practicality as necessity.

The witness then proceeded to give further instances of improved service life in structures. Continuing, he said:

The railway accounting officers who have testified have, in various ways, alleged that the alternative plan requires such detail of consideration and distribution of expenditures as to be impracticable of accomplishment, and again, if it were feasible that the expense would be prohibitive.

It is difficult for anyone who is outside the railway accounting profession to produce positive evidence to refute such

allegations. We believe, however, that the facts do refute them, and the suggestion is offered that one or more carriers be asked to file with the Commission for examination by those who are concerned in the solution of this problem a complete file of all forms including instructions relating thereto, and memoranda, which collectively reflect the established channels through which information is now gathered for the purpose of making records for all purposes, and not solely for accounting purposes. If the carrier or carriers publish a list of standard forms which are carried in the stationery stock, it is suggested that they be asked to supply a copy of that also.

The witness cited joint use of Chicago & Western Indiana facilities and privately maintained industrial tracks on the Chicago Junction, with the resultant accounting, as evidence of the practicality of assigning costs.

Cross questioned by Examiner Barnes of the Commission's Bureau of Accounts regarding the probable cost of accounting for maintenance on all the railroads of the country on the basis of these costs on the C. & W. I., the witness could not answer. Mr. Barnes also asked some questions relative to the working of the Roberts plan had it been in effect during federal control. The witness expressed himself in favor of divisional accounting when done on an actual, "and not on an alleged" divisional basis.

Difference in Federal Settlement

Due to Contract, Not Accounts

J. J. Ekin (comptroller, B. & O.) next took the stand to testify regarding settlements for the period of federal control; the point he made being that differences arose out of the application of the contract and not from an application of the accounting rules. W. C. Wishart (comptroller, N. Y. C.) offered similar testimony.

N. I. T. League Questioned as to

Its Spokesmanship for Shippers

At the beginning of the afternoon session on November 24, Counsel Burchmore of the N. I. T. League took up the interrogatories of E. R. Woodson of counsel for the Railway Accounting Officers Association regarding the nature of the membership of the league, its committees, etc. He stated that the league's accounting committee was made up of W. H. Day, chairman (now president of the league), Robert Fulbright and C. T. Vandover. He stated that this committee was in close touch with the executive committee, composed of 44 traffic men representing chambers of commerce and large industries. He stated that the committee endorsed the presentation of Witness Roberts and that the league itself had twice endorsed it. He stated furthermore that he could offer a long list of railway executives who would speak a good word for the league, "just as we would speak a good word for your executives. Although we think they do a good many 'ornery' things, still they are pretty good fellows."

Mr. Woodson replied that Mr. Burchmore's statement did not satisfy his inquiries and then he himself offered to answer them. Mr. Burchmore stated that his curiosity was aroused and reiterated that there was "not the slightest doubt of the whole-hearted backing of the league membership of this proposition."

Mr. Woodson then read a statement in which he first quoted testimony in which the league was credited with representing shipping interests generally throughout the country. He said that Bradstreet's July rating book listed 2,413,913 ratings, that the Statistics of Income for 1925 showed 430,072 corporations, 309,414 partnerships and 978,792 individuals in business. He then stated that the league had a membership of "about 890 individuals, who are connected with approximately 600 business firms

and about 250 trade organizations, etc." Mr. Woodson said that he secured these figures from the 1927 membership list of the league. He then proceeded to state that the league had no members in Arizona, Idaho, Montana, Nevada, New Hampshire, New Mexico, Utah and Wyoming. He mentioned other states and cities in which, he said, there were few members, including a number of large cities which, he said, were not represented in the league membership.

Mr. Fulbright interrupted to say that many memberships were held by chambers of commerce and other bodies and not by individuals. Mr. Woodson replied:

Of the 890 individuals comprising the membership of the league, about 250 are connected with trade organizations, chambers of commerce, boards of trade, etc. It is not probable that these representatives are authorized to speak for their own organizations unless the members of their own organizations have first had the opportunity to give utterance to their views on any particular question. Therefore it seems likely that those representatives carry their memberships in the league primarily for educational purposes.

Indeed, it remains to be demonstrated that the members of the league as a whole, whether representing individual firms or otherwise, are in position authoritatively to speak on some of the questions that come before the league.

Continuing, Mr. Woodson said, "If the National Industrial Traffic League represents shippers generally, who do the other commercial and industrial organizations represent?" He then said that the Department of Commerce had listed approximately 9000 industrial associations; that the Associated Traffic Clubs of America had a membership of 20,000 and that the U. S. Chamber of Commerce had 779,262 members.

He quoted a statement of J. H. Beek, executive secretary of the league stating that the Commission had called upon the league to "represent the general public and present a case" in the present proceeding. "If we accomplish what we hope to accomplish," he quoted Mr. Beek as saying, "its value will be inestimable to the shippers, but a comparatively small number of shippers pay the expense."

Inquires at Whose Instance League Entered Case

Mr. Woodson said that there had been a general impression that the league had requested this hearing but that this statement by Mr. Beek tended to indicate that the Commission had requested the appearance.

Mr. Burchmore protested that Mr. Woodson's taking "an extract out of some minutes . . . misconstrued the genesis of the league's interest in this matter." He said that, as counsel, he had advised officers of the league that the Commission was anxious to hear from shippers and others interested in the integrity of railroad accounts, but that he knew of no direct request from the Commission to the league that it intervene in this case. He said that the league claims to represent the interest of shippers "but not every one of them" and that the league's action on any question is not binding on every member; however, that in this case there had not been one dissenting voice.

Mr. Fulbright added that the American Railway Association and the Association of Railway Executives recognized the league by appointing committees to deal with it.

Commissioner Eastman said that he was quite certain that the Commission had not formally requested the shippers to appear, although he might have expressed the opinion that it would be desirable for them to interest themselves in the proceeding.

Mr. Burchmore added: "There is no reluctance on the part of the league to intervene in these proceedings. . . . The league is making the largest expenditure in this

matter that it has ever made in any undertaking that I know of in the way of litigation."

Testimony of L. R. Bitney

Counsel for the Savings Bank Association filed a statement in answer to certain questions made by Commissioner Eastman at the October hearing. Then L. R. Bitney (statistician, Minnesota Railroad Commission) took the stand and testified further in support of his plan for the assignment of revenues, expenses and valuation by states. He stated that such assignment had been used by the railroads in cases where the results would favor the roads. He mentioned a South Dakota case in which operating expenses were apportioned on a train mileage basis which, he said, assumed the same cost in that state as in other states. By securing the source data and making direct assignments, he said, he reduced the assignment by more than one million dollars. He presented other testimony along the same lines and then stated his opinion that cost studies were not satisfactory, citing the expense and the short periods covered.

When the hearing was reopened on the morning of November 26, the witness was cross-questioned at length by Fletcher Rockwood (Great Northern) regarding the details of his plan. During the course of this cross-examination the witness stated that his plan would give more information regarding locomotive repairs and some station expense, but admitted that arbitrary separations would be necessary in the case of freight car repairs, traffic expense and general expense. He said that his plan would provide for the distribution of loss and damage as between commodities but not between line-haul and terminal. He said that he had no exceptions to take to the proposal of the Washington and Oregon commissions.

Testimony of Drs. Lorenz and Parmelee

Mr. Bitney was followed on the stand by Dr. M. O. Lorenz, chief of the Commission's Bureau of Statistics, who presented an exhibit giving further details regarding the cost accounting plan on the German Railways. He was followed by Dr. Julius H. Parmelee, director of the Bureau of Railway Economics, who offered exhibits regarding the situation in railway cost accounting in Germany, Great Britain, France, Belgium and Australia and a historical summary of the separation of railway costs in the United States from 1888-1928.

Mr. Fulbright objected to the receipt of expressions of opinion and his objections were noted. Dr. Parmelee stated that, while the Bureau of Railway Economics had taken no official position on the question at issue, its informal position was that existing rules provided the cost data necessary for all practical purposes. He said that the word "cost" in this connection had no generally accepted meaning; that separation of freight and passenger costs involved arbitrary apportionment and that further efforts toward determining specific costs would involve still other arbitrary bases; and that such pyramiding of formulas would be dangerous. He added that "cost accounting" is not accounting at all but a method of statistical analysis.

He mentioned an article by Dr. Lorenz in the *Quarterly Journal of Economics* in which it was said: "What is often called cost accounting would better be named statistical cost analysis." He added that he agreed with Dr. Lorenz.

Dr. Lorenz cross-examined the witness on his opinion regarding the separation of freight and passenger costs. Dr. Parmelee replied that he would not recommend their discontinuance, although he felt their use was re-

stricted. He would not object to further studies to permit further sub-division of these expenses if it were recognized that this would not be cost accounting, but rather statistical analysis.

Ekin Quotes I. C. C. Bureau as Opposed to Cost Accounting

The last witness was J. J. Ekin (comptroller, B. & O.) who stated that the accounting officers had welcomed the opportunity afforded for public discussion of their business; that they had avoided the easy course, which would have been to endorse "plausible but fallacious theories" even though championship of such theories might thereby make their jobs more important. He cautioned against characterizing as "standpatters" and "reactionaries" those whose experience warned them against theories, "apparently new, but age-old." He said that the accounting officers subscribed to the following statement of policy sent down in a letter from the director of the I. C. C. Bureau of Accounts:

Our experience has been that the assignment of expenses to determine the cost of transporting any specific class of business must be through special studies. Any attempt to show in the financial accounts of carriers currently the expenses of all classes and kinds of business carried could only be effected through imposing upon the carriers enormous burdens of expense in accounting.

On the subject of accounting for shop work the witness said:

It has been suggested in this hearing, that the railroads should use the so-called jobbing cost method for their shops. However, the description of the jobbing system as given in the record will be generally recognized as the shop order system used by the railroads. I would point out that that is the system we use in our large shops for back repairs, or where heavy repairs in big shops are performed. That may be a little bit of a local term, but it means where you have a heavy piece of work to do in a given shop.

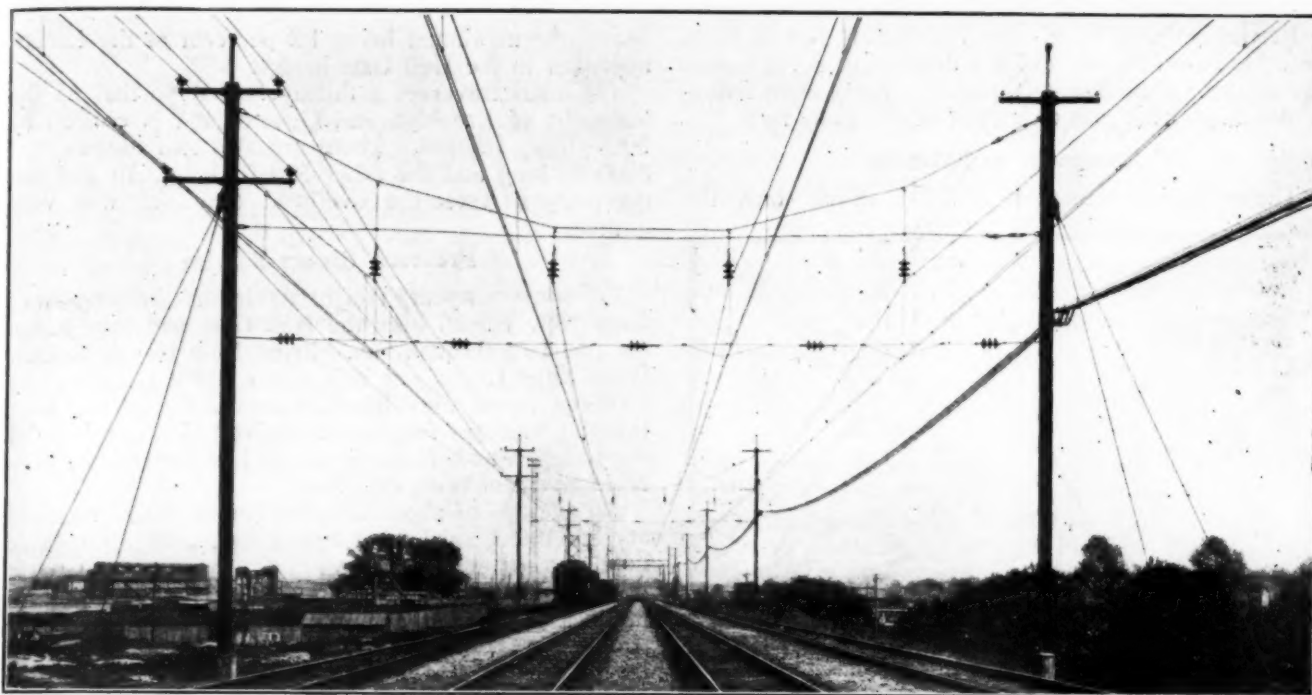
The suggestion has been made in this hearing that for purposes other than the shops the railroads should use the so-called continuous process cost method, but as described in the record the continuous process cost method is what the railroads are now, and have for some time, been doing, namely, controlling expenses through performance, with related statistics, such expenses later carried into primary accounts.

The hearing closed with a request by Commissioner Eastman for suggestions in regard to the rule for the entry of the cost of purchased property and the witness replied that he would endeavor to secure an expression from the accounting officers on this subject.

* * *



Placing a 45-ton Steel Span on the Canadian Pacific's New Don Valley Bridge



Four-Track Cross Catenary Construction

The Bay Ridge Electric Traction Installation

Many complications of construction and operation encountered in electrifying freight line over the Long Island and New York connecting railroads

THE freight line of the Long Island and New York Connecting Railroads from Port Morris to Bay Ridge was electrified in 1927, electric operation commencing in July of that year. This line carries two services, the one a through freight service operated by the New York, New Haven & Hartford and the other a local freight and switching service operated by the Long Island.

The through service is between New Haven, Conn., and Bay Ridge Yard on New York Bay where freight is handled by car floats across the bay to and from Greenville, N. J., the eastern freight terminal of the Pennsylvania Railroad. The Long Island Company's service consists of local freight and switching service between bay Ridge and Fresh Pond, and at times interchange of freight at Bay ridge with its connections.

The so-called "Kauffman Act" of the State of New York (later declared unconstitutional) prescribed the electrification of all railroads within the limits of the City of New York and adjacent counties, but regardless of this the returns, both direct and indirect, justified the cost and added the advantage of eliminating smoke difficulties in the long tunnel under East New York.

A portion of this line had previously been electrified in connection with the inauguration in 1918 of through passenger service between Washington and points in New England via the Pennsylvania and the New

Haven lines over the Hell Gate Bridge. This portion included the New Haven's tracks at Port Morris, just east of the Hell Gate bridge, and also two of the New York Connecting Railroad Company's tracks from Port Morris over the Hell Gate bridge through Bowery Bay Junction (where the passenger line branches) to Sunnyside yard of the Pennsylvania Railroad where connection is made to the tunnels under the East river into New York City. The New York Connecting Railroad section terminates at Fresh Pond Junction,—the Long Island Railroad tracks commencing at this point and continuing south and westward through the Borough of Brooklyn to Bay Ridge Yard. Adjoining the Bay Ridge Yard of the Long Island is the freight terminal of the U. S. Army base, a portion of which was electrified at the same time.

The electric traction system adopted was the 11,000 volt alternating-current overhead trolley, thus permitting through operation electrically of freight trains from New Haven, Conn., to Bay Ridge, N. Y., a distance of about 86 miles.

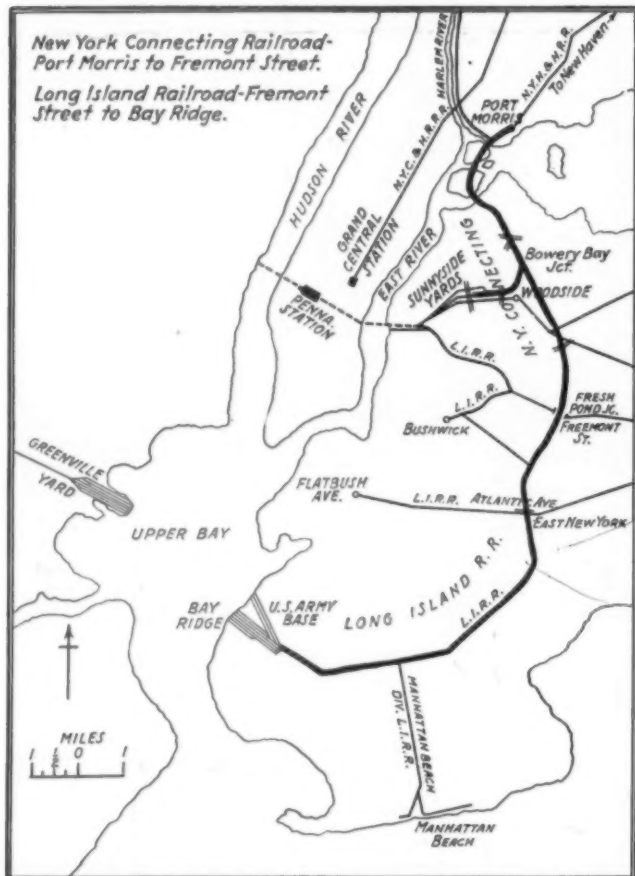
The total track mileage electrified under this recent electrification is as follows:

Road	Route Miles	Track Miles
New York Connecting Railroad.....	8.14	14.00
Long Island Railroad.....	11.56	80.80
U. S. Army Base.....	2.50
Total	19.70	97.30

Between Fresh Pond and Manhattan Beach Junction there are four tracks for a distance of seven miles; the balance of the line is two-track. Forty eight industrial sidings were also electrified at the same time.

Alinement and Grades

The general alinement is a fairly simple one, the



Map Showing Connection of Bay Ridge and Port Morris Yards Over Long Island and New York Connecting Railroads

average curvature being on the order of one degree with a maximum of 4 deg., 24 min. Grades are fairly

heavy, the maximum being 1.2 per cent at the eastern approach to the Hell Gate bridge.

The road traverses a thickly settled portion of the boroughs of Brooklyn and Queens, and is crossed by 50 highway bridges. There are also two tunnels, one 3500 ft. long and the other 500 ft. long. In and under many of these the overhead clearance was very limited.

Previous Steam Service

For some ten years freight service has been operated from New Haven over the Hell Gate and Bay Ridge but not as a through run. From New Haven to Oak Point Yard (about one mile east of Hell Gate bridge) 1900-ton trains were handled electrically by the New Haven's standard freight locomotives. From this point the freight was handled by steam locomotives, the general movement being as follows:

An average of about 450 cars per day were received at Oak Point Yard from Bay Ridge, with an outside maximum of some 700 cars.

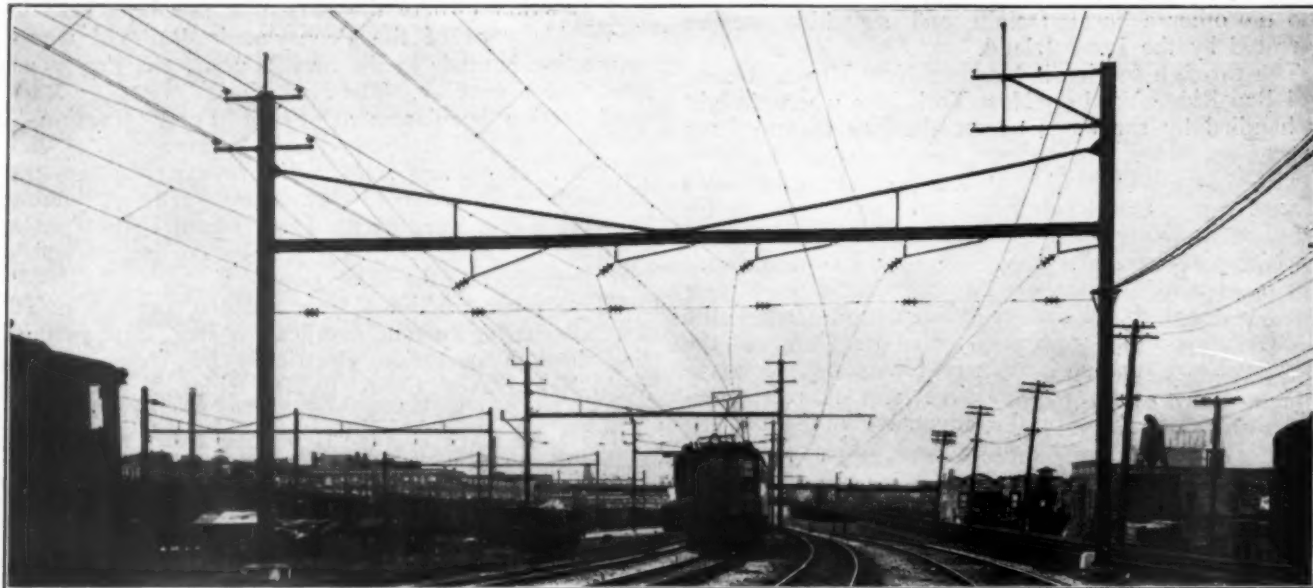
The highest tonnage rating of the New Haven locomotives assigned to the work was 2150 tons, and no trains were double-headed. Trains were limited in length to fifty cars, and the average number of trains per day was about twelve, with a tonnage of about 45 tons per car.

On the west bound approach to Hell Gate bridge an electric pusher locomotive was used, this westbound track having been previously electrified in 1917, when the passenger service was electrified. It will be noted that while the trains received from Bay Ridge were only 2150 tons due to limited capacity of the steam locomotives, they were filled out at Oak Point to 3800 tons for handling to New Haven, Conn., by double electric locomotives.

The westbound movement consisted of 80 cars, chiefly empties.

Electric Operation

Under electric operation, 1600-ton trains (32 cars) for single locomotive and 3200-ton trains (64 cars) for double locomotive are operated, eastbound, clear through from Bay Ridge to Cedar Hill Yard (New Haven), thus eliminating the stopping and filling out at Oak Point, most of the classification being done by the Pennsylvania Railroad at Greenville, N. J.



Cross Bridges Are Used on Curves Where Guying is Difficult

The total number of through trains eastbound from Bay Ridge used as a basis of estimate was 600 cars, consisting of:

- 7—3800-ton trains per 24 hours (double-headed)
- 1—1750-ton train per 24 hours (double-headed)
- 8—trains total per 24 hours.

The movement westbound from Oak Point to Bay Ridge was also taken as 600 cars handled in eight trains of 75 cars each.

The characteristics of two New Haven 076-0111 type electric freight locomotives compared with the heaviest (J-2) steam locomotives are as follows:

Comparative Tractive Power of Steam and Electric Locomotives

	Steam	2 Electrics	Ratio
Weight on drivers, lb.....	240,000	357,600	1.37
Tractive effort, starting, lb.....	58,000	100,000	1.71
Tractive effort, continuous rating, lb.....		34,200	
Tractive effort, one-hour rating, lb.....		49,600	
Tonnage rating from Oak Point to Cedar Hill, tons.....		3,800	
Tonnage rating from Bay Ridge to Oak Point, tons.....	2,150	3,200 east 2,000 west	1.49 0.93

Through operation of the New York, New Haven & Hartford alternating current freight locomotives was

mented by an emergency supply from a frequency changer station at East New York, capable of delivering 5,000 kw. to or from the Long Island's power system. This frequency changer set is also operated as a synchronous condenser during heavy load periods to improve the power factor and trolley voltage.

Transformer Stations

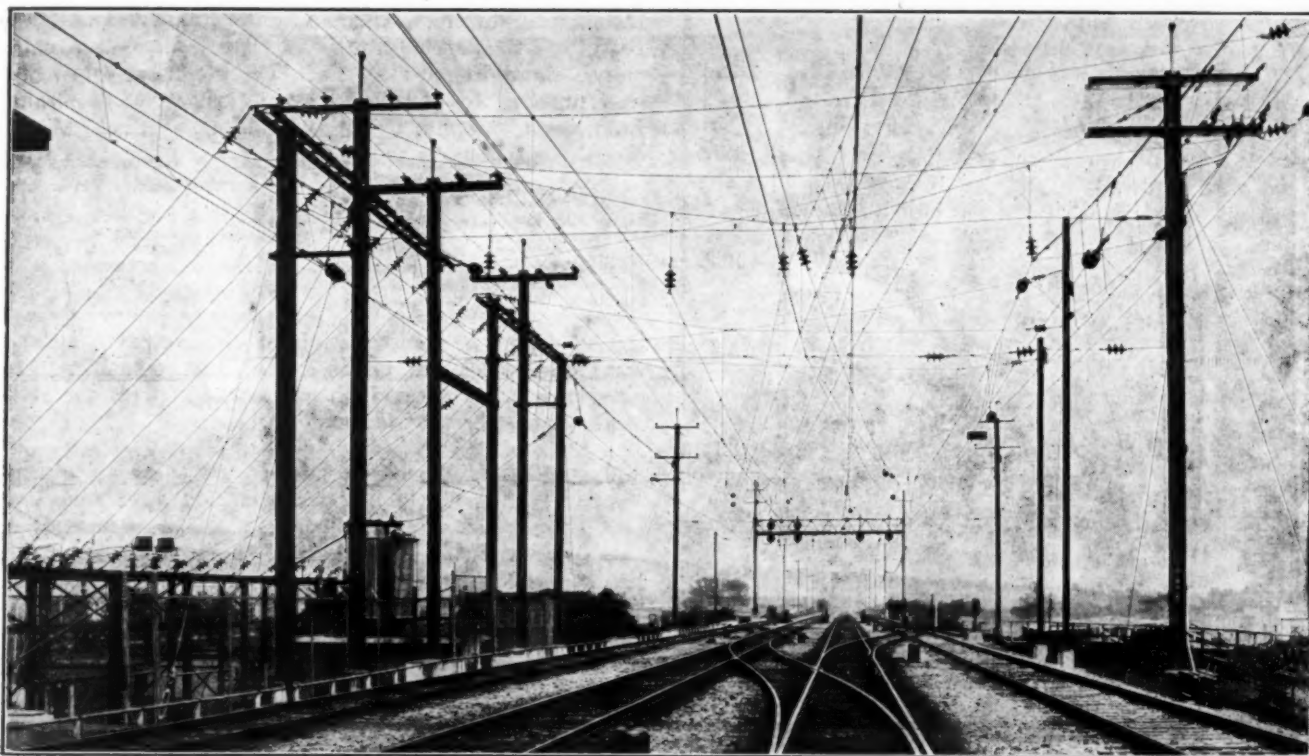
The 22,000-volt power is delivered to six outdoor transformer stations along the right-of-way as follows:

Location	KVA.
Bungay Street (Bronx)	3,000
Bowery Bay (Queens)	3,000
Fresh Pond (Queens)	3,000
New Lots (Brooklyn)	3,000
Manhattan Beach Jct. (Brooklyn)	3,000
Bay Ridge (Brooklyn)	6,000

Transformers are of auto type, outdoor, self-cooling.

The electrical apparatus was supplied by the Westinghouse Electric & Manufacturing Company, the Pittsburgh Transformer Company, the Electric Power Equipment Corporation, etc., and others.

The distribution system is the same as that of the New Haven, which as is well known is a 22,000-volt



Special Construction Including Cross-Overs and Sub-Station

a pre-requisite. These are not equipped with a.c.-d.c. control as are their passenger locomotives, which have to operate on the New York Central's third rail into Grand Central Station. This, together with its general suitability for this class of service, led to the adoption of the a.c. single-phase trolley system, this also being the standard of the Pennsylvania Railroad, which controls the Long Island. The earlier Long Island electric operation, largely multiple unit passenger service, is by the d.c. third rail system.

Power is obtained from the New York, New Haven & Hartford power system which consists of a generating station at Cos Cob, Conn., supplemented by purchased power delivered at West Farms in Bronx Borough, New York City, and Devon and New Haven in Connecticut. This power supply is further supplied

three-wire system, the trolleys being 11,000-volt, the feeders 11,000-volt of the opposite polarity, and the track return the neutral point.

Four 4/0 copper conductors are carried as feeders on pin insulators on the catenary poles in the open construction. As has already been noted, there are numerous highway bridges of very limited clearance over the tracks requiring that the feeders be carried on tall poles so as to span the highways.

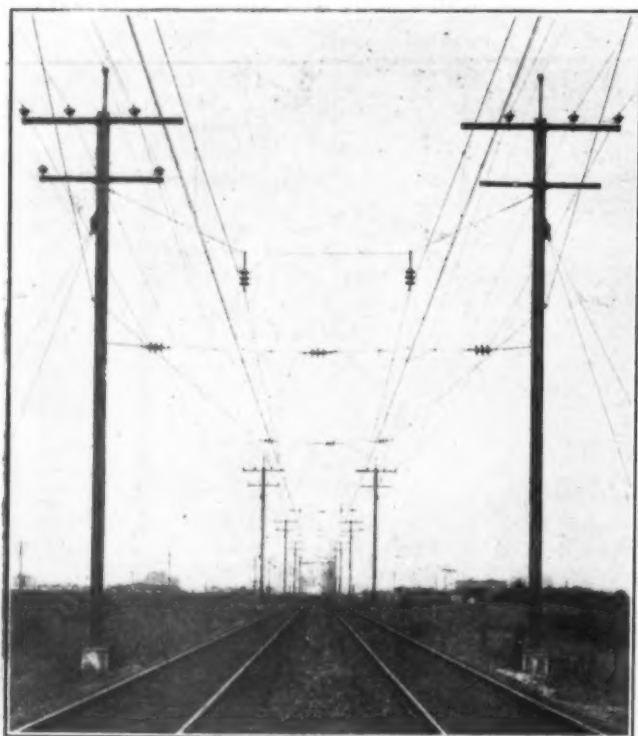
On main tracks both rails have joints bonded, the gas flame welded bond being used throughout, welded to the head of the rail.

Catenary Construction

Rolled steel H columns are used for poles throughout the electrification. Two types of foundations are used

for these poles, the predominating one being that used for poles not subjected to curve pull from the wires, and also for poles subjected to curve pull but which could be guyed. For this foundation a cylindrical hole was dug in the ground about 3 ft. in diameter and from 6 ft. to 10 ft. deep. The hole was then lined with a length of corrugated steel culvert pipe. A shallow layer of dry concrete mix was then laid at the bottom of the hole, and on top of this was placed a loose steel plate to act as a base for the pole. These plates were all set carefully to correct elevation from top of rail, and bore guiding angles for placing the pole at correct distance from track. This method permitted the opening up of a quantity of holes prior to setting the poles without danger of cave-ins. At a convenient later time the poles were delivered and erected by work-train and derrick, and wedged in place in the culvert pipes. A second work train followed, equipped with water tanks and concrete mixer, and the hole was filled with concrete.

Self-supporting poles on curves have usual square



Two-Track Cross Catenary Construction

concrete foundations with forms built in place. Signal bridge foundations are of the same type.

Cross catenary is used generally for support of the messenger and trolley wires. For four-track and yard work, cross catenary is used. On curves, poles are guyed where possible, a pre-cast reinforced concrete anchor being used with guys of extra high strength steel strand. Where it is impossible to use guys the beam type of bridge is used, consisting of H column poles already mentioned with cross beam of H section with sag braces of angles.

The longitudinal catenary system consists of a phono-electric bronze strand messenger, from which are suspended phono-electric round rod hangers. These hangers, support a 4/0 copper auxiliary messenger to which the 4/0 bronze contact trolley is fastened by bronze clips and bolts. The cross catenary is also bronze strand with bronze hangers,—the entire catenary system, therefore, being of non-corrodible materials.

Character of Construction

Despite the shortness of the route (20 miles), it will be noticed that track mileage is over 97 miles. Included in the mileage are four interlockings, 48 industrial sidings and 11 yards of from 5 to 30 tracks. It will, therefore, be seen that the amount of special work was very high, making the construction work considerably more difficult than a mere tally of the track mileage would indicate. Construction work started April 1, 1926, and partial electric operating commencing between New Lots and Fresh Pond in April of 1927. Through service between Port Morris and Bay Ridge commenced June 29, 1927.

Switching Locomotives

As before stated, the through freight service of the N. Y., N. H. & H. is handled by its standard electric locomotives, the characteristics of which have already been given.

The Long Island's switching and transfer service is handled by 14 motive power units designed to be used either singly or two coupled together and operated as one locomotive. These locomotives were designed by the motive power department of the Pennsylvania Railroad, and the mechanical parts were built at that company's shops in Altoona, Pa. The electrical apparatus was supplied by the Westinghouse Electric & Manufacturing Company.

Principal Characteristics of Switching Locomotives

	One Motive Power Unit
Wheel arrangement	0-6-0
Rigid wheelbase	12 ft. 8 in.
Diameter of drivers	62 in.
Length over coupler faces	63 ft. 0 3/4 in.
Total weight, and weight on drivers	158,000 lb.
Maximum tractive effort	50,000 lb.
Motors	3—190 hp. 235 v. a.c. series connected type

The design and installation of the complete system was done by Messrs. Gibbs & Hill, Inc., consulting engineers for the railroad, in collaboration with the railroads' operating officials and engineers.

THIRTY STONE SLEEPERS of the old Philadelphia, Germantown & Norristown Railroad, laid in 1832, have been presented to Henry Ford by the Reading Company. These stones were unearthed during excavations in Philadelphia for the new North Broad street station. It is understood that Mr. Ford desired the sleepers for his museum at Dearborn, Michigan.

* * *



On the M-K-T in Southern Oklahoma

N. I. T. League Meets in New York

Twenty-five committees report studies on multitude of details of freight transportation—Vigorous criticism of railroad wage policies

THE National Industrial Traffic League met in annual meeting at Hotel Astor, New York City, on Thursday and Friday, November 22 and 23, President C. E. Childe in the chair.

There was an attendance of about 500 members and guests, and the discussions were kept up with lively interest throughout the four sessions. The first business on Thursday morning was the adoption of an amendment to the constitution by which the board of directors is increased in number from 45 to 75. The amendment also including a clause requiring the president to appoint nominating committees 30 days in advance of the annual meeting. In the full discussion of the amendment, different members spoke of the increasing strength and importance of the league and of the desirability of having representation on the board from all parts of the country. Territorial representation, it was said, is a vital element in the strength of the league; any city or large town of consequence should realize the advantage to itself in being known as having an interest in this body. Following the adoption of these amendments, the meeting was addressed briefly by E. J. C. Finch, representing the Canadian Industrial Traffic League, who spoke of the desirability of co-operation between the leagues of the two countries, and whose views were cordially reciprocated.

The docket on which the meeting acted had no less than 34 items, many of them with a half dozen sub-heads, and every subject was carefully dealt with. The outstanding feature of the convention was the report of the legislative committee, R. C. Fulbright, chairman; and the outstanding subject in this report was the recommendation concerning the Railway Labor Act.

On this point, the committee held and the league heartily endorsed the recommendation that action ought to be taken to amend the railway labor act so as more effectively to give the public right to representation at hearings concerning railroad wages. The report says in part:

The course of labor disturbances since the last annual meeting of the league leads your committee to recommend that the league actively advocate amendments to the existing law so that the public shall have the right of presentation and representation in all proceedings in the nature of arbitrations and mediations. It should not be lawful for government officials to enter into formal conferences in which secret agreements are reached between the railroads and organizations of employees by which substantial increases will be brought about in the cost of railroad operation, without the shipping public having a right to know what is going on.

Manifestly a large amount of the service of mediation must be performed by interviews with representatives of the respective parties and frequently without it being considered wise or expedient for such negotiations to be made public. But when the announcement is made to the press that an agreement has been reached under the supervision of the Board of Mediation, *** in satisfaction of demands which have been made public for substantial increases in the rates of pay, we believe that it is about time that the right of the public should be recognized. *** Either or both of the contending parties may be right in whole or in part in their contentions, but the public is vitally interested and should not be excluded if we are to have government regulation or government supervision of such adjustments. The transportation service of common carriers is a public service affecting vitally the prosperity of our nation and we have long since become reconciled to government regu-

lation of such service and of the compensation to be paid therefor. The men are entitled to reasonable compensation and to the right to serve or not to serve; and the law provides that the carriers are entitled to earn a standard return; but the shipping public will have to pay the bill and should have some right to determine whether or not the railroads are paying reasonable prices for their labor and materials.

Chairman Fulbright, in presenting the foregoing report on legislation with respect to adjustment of railroad labor disputes, supplemented it with a vigorous denunciation of the practical operation of the present law governing disputes between carriers and employees. He described the working of the law as a vicious circle under which when any given class of employees obtained an arbitration award granting an increase, immediately other classes of railroad employees demanded proportionate increases even though they had previously failed to obtain awards in other proceedings. He condemned the action of the carriers in offering an increase of 6½ percent to the conductors and trainmen in the western district who had been denied any increase in an arbitration proceeding held a year and a half ago in which a thorough hearing was had. He said the only reason the carriers could assign for offering the increase was because an increase of 6½ percent had been awarded to the firemen in another arbitration about a year ago. He criticized the Emergency Board appointed by President Coolidge for failing to find what the undisputed evidence showed, namely, that the arbitration board in 1927 was justified by the evidence in finding that the conductors and trainmen were not entitled to a further increase and that since that award there had been no increase in the cost of living in the western district, but actually a slight reduction. He also criticized the board for declining to go into the merit of the working rules which had been complained of but stated that the fact that the board had only 30 days in which to perform this task and had devoted the greater part of that to holding hearings, made it physically impossible for the board to go into detailed consideration of the numerous issues involved.

He then recounted numerous wage increases which had been brought about in the western district since the Railway Labor Act of 1926 was adopted and stated that the aggregate of these amounted to nearly \$40,000,000 per year. He stated that the increases had already spread to almost every line of service and that in most of them the rates of pay had been advanced to levels higher than the peak labor rates of 1920. He further stated that members of the employees organizations are already talking about obtaining a six-hour day, not because they desire to limit their service to six hours, but because they desire to increase their pay by reason of the overtime.

Mr. Fulbright stated that Section 15a, which the carriers publicly defend so constantly, requires that the railroads shall be efficiently and economically operated before they can invoke their right to earn a fair return under that statute, and that when the roads advance wages without considering the effect upon the public or the necessity for such increases, and when they continue the operation of uneconomic working rules which ac-

cording to their own testimony result in wasteful transportation, they have no right to come before the commission and demand increases in freight rates to make up their deficiencies. He indicated that the shippers should be giving consideration to more fundamental changes in the labor act than have yet been recommended. These fundamental changes would involve government regulation of the wages of railroad labor but no recommendation was made with respect to this phase of the subject.

Demurrage, Diversion and Highway Transportation

The report of the committee on car demurrage and storage, J. S. Brown, chairman, took up most of the time of the convention on Thursday forenoon. This report consists mainly of four pages of details of the A. R. A. demurrage rules with notes on discussions which have been held by this committee with the A. R. A. committee concerning proposed changes. A notable point in this discussion concerned the free time to be allowed when a car received at an industry is immediately used, after being unloaded, for an outbound shipment. The time now allowed is 24 hours but as this use of a car conserves equipment and saves expense, the shippers ask for 48 hours. Use of cars owned by the railroads in intra-plant service is alleged by certain roads to cause considerable loss; and the practice is unduly favorable to plants which work under the average agreement. No agreement has been reached with the A. R. A. committee and members of the league are asked to give to the committee their views.

Classification. Wm. P. Libby, chairman, presented a brief report devoted mainly to the doings of the League in securing tariff rule No. 79 from the Interstate Commerce Commission. This rule does away with longstanding difficulties in adjusting rates where the Fourth section had been violated. This rule has been made Rule 44 in the classification, and classification committees now have reasonable freedom in publishing changes. The committee also has endeavored to obtain simplification of the rule regulating freight charges where a shipper orders a car without specifying its length; but so far no action by the railroads has been obtained.

Diversion and Reconsignment. This committee, H. D. Rhodehouse, chairman, has had extensive conferences with the railroads concerning Rules 5, 8, 10, 12 and 16. The committee has been thus far unsuccessful in getting a more liberal rule as to what security consignees must give when "order-notify" shipments are delivered without surrender of the bill of lading. It is desired to have Rule 5 changed so as to permit more than one change in destination under the published through rate. The views of members of the league on this point are not as yet well settled but the committee was instructed to try to secure a rule providing for more than one change. There is dissatisfaction under the practice in some regions with shipments covered by straight bills of lading carrying instructions to notify another party and to deliver only upon surrender of the bill of lading, but no action has yet been taken.

Co-operation with Railroad Traffic Executives. This committee, W. H. Chandler, chairman, made a brief report. Members who have complained of friction in dealing with railroad officers were reminded if they carefully observe the terms of the agreement regulating these conferences and insist upon the carriers doing the same, there should be little difficulty.

Express Committee. This committee, J. E. Wilson, chairman, presented a brief statement of what the railroads are doing toward taking over the business of the

American Railway Express Company. The committee was instructed to take such action as may be found necessary to oppose the establishment of a new express company with authority to do anything other than conduct transportation and a travelers' check service; and to insist that in granting a certificate of convenience and necessity for any new express company, the Interstate Commerce Commission shall stipulate that no increases in the cost of transportation shall take place except on the approval of the Commission.

Highway Transportation. This committee, C. B. Baldwin, chairman, finds no visible demand among shippers for legislative regulation of highway transportation. The value of the motor truck depends upon its flexibility and freedom from restriction. The league should view with concern any move to deprive the user of motor trucks of a service so vital to business prosperity. Motor trucks should not be excluded from the highways except in the interest of public safety or because of financial responsibility or inability to give dependable service.

Postal Service. This committee, R. M. Vowels, chairman, recommends favoring the bill before Congress to provide parcel post service with Cuba, and the report was approved.

Car Service. This committee, G. C. Conn, chairman, finds the movement of freight in carloads uniformly good. There are complaints regarding l. c. l. service, most of which, however, can be remedied locally.

Coal Claim Rules. J. B. Battle, chairman of this committee, reported that the railroads continue their objections to the rules urged by the league but it is recommended that the league continue its support of the rules and this position was endorsed by the meeting.

Inland Waterways. F. S. Keiser, chairman of this committee, presented a brief report to the effect that because of wide divergence of opinion, the subject of the St. Lawrence river waterway should be deemed a sectional matter and the league should take no action. This report was adopted though two members of the committee presented a minority report, objecting.

The Legislative Committee

The action of the legislative committee in connection with the railway labor act, has been given in preceding paragraphs. Other subjects dealt with were consolidation of railroads; section 15a; the Hoch-Smith resolution; repeal of Pullman surcharge; and many others. An appendix to this report contains a list of bills, of interest to the league, which are now pending before Congress.

On the question of consolidation, the committee goes at length into the merits of the bill before Congress, H. R. 12,620, introduced by Representative Parker, of New York, proposing a complete revision of existing law. The committee approves this bill in general but expects long discussion before action is taken. A committee of the Association of Railway Executives has decided to support it and an effort is to be made to secure action in the coming short session of Congress. The committee aims to secure in any congressional law, the continuance of free competition; and the formulation of provisions looking ahead, not backward. The railroads ought to have a fair income; 5¾ per cent is too small. The recapture provision is not approved. Individual members of the league should be active in advocating a better rate-making law.

Reporting on Section 15a and proposals for new legislation, the committee, believing this section to be unworkable, recommended that the league advise Congress

that it is believed unwise to undertake to clarify and segregate railroads with respect to 15a; the subject should be considered in its entirety and not be dealt with by the process of eliminating a part of the roads. On the Hoch-Smith resolution, the committee calls upon members of the league to protest to their members of Congress against the attempt to carry out the purposes of this resolution. It does the farmer no good.

The exercise by the Interstate Commerce Commission of its power to make minimum rates, was the subject of a good deal of criticism and there was a long discussion on bills which are now pending before Congress. The committee recommends endorsement of the principle embodied in the bill of Representative Newton, of Minnesota. The law should empower the Commission to fix a minimum rate only where there is substantial evidence that the lower rates which are proposed are less than compensatory. This section of the report was adopted by the meeting but there were two or three negative votes.

Recommendations of the committee unfavorable to the proposal of Senator Smoot that the railroads should furnish free interstate transportation for members of state regulatory bodies; favorable to endorsing the bill of Senator Watson clarifying the bill-of-lading situation as to the statute of limitations on claims; and opposing the movement to repeal the Pullman surcharge, were adopted by the meeting without discussion.

Reparation Orders of the Commission. Orders of the commission awarding reparation have shown serious diversity of opinion among the commissioners, and the league should repeat its action of six years ago, calling for a law allowing the right of appeal from decisions of the commission on purely legal questions, and also in the case of negative decisions which are based on insufficient evidence. The committee has found numerous acute situations and intends to keep up its efforts for a modification of the law.

The report of the committee as a whole was unanimously approved.

Various Brief Reports

J. H. Beek, chairman of a special committee, reporting on the question of payment of freight charges, there being some demand for a law allowing the extension of credit, proposes to go before the Interstate Commerce Commission, for relief. The committee insists that the shippers neither require nor desire credit; all they ask for is time to receive the freight bills and check them, which in the ordinary course never requires more than eight days. In the commercial world that length of time would not be regarded as credit.

Charles Orchard, for the weighing committee, reported on the proposed revision of the National Code of Weighing rules. In Rule 9, which specifies charges for weighing and reweighing, the committee would allow the charging of tariff rates for transportation to and from a scale only where errors discovered amounted to more than the toleration allowed in Rule 8.

Tariffs. This committee recommended that no objection be made to the withdrawal of tariff Rule 77, provided that a new intermediate rule is published; recommended also that rule 5A, last paragraph, and Rule 55-A be rescinded, and reported in favor of the establishment of a joint international commission by treaty to regulate through rates between the United States and Canada.

Fourth Section. A special committee reported on

five bills pending in Congress dealing with this section. The committee apparently opposes all of these bills and its report was adopted by the meeting.

I. C. C. Budget. A special committee on this subject, P. M. Ripley, chairman, reviewed what has been done by the league to secure more adequate appropriations for the commission. The committee will continue its endeavors to secure adequate appropriations with a view to an enlargement of the staff of the commission and a speeding up of its work.

Railway Accounting Rules. A special committee, W. H. Day, chairman, presented a report of nine pages, which was not read and was not discussed, reviewing what has been done by this committee during the past year.

Express rates. A special committee reported on an extended investigation which has been made concerning the improper construction of sub-block rates by the American Railway Express Company. It has been found that, without any apparent justification, a large number of express stations throughout the country have been shifted from one sub-block to another and that illegal and excessive rates have thus been put into the tariffs. Negotiations with the Interstate Commerce Commission are still pending. It is proposed to enter formal complaint before that body if the practices complained of are not soon corrected.

To Simplify I. C. C. Practice. Confirming the report of a committee, the league adopted resolutions looking to the adoption of means to encourage the use, in the presentation of formal cases before the Interstate Commerce Commission, of the "modified procedure" or other co-operative handling. It is hoped to secure the cooperation of the railroads in this movement.

Election

The election of officers for the ensuing year resulted in the choice of the following: President, W. H. Day, Boston; vice-president, Herman Mueller, St. Paul; treasurer, Roy W. Campbell, Chicago. Eight regional vice-presidents were chosen, as follows: Trunk Line, H. M. Freer, New York; Central Freight Association, F. H. Baer, Cleveland; New England, R. W. Poteet, New Britain, Conn.; Southwestern, U. S. Pawkett, San Antonio, Tex.; Western Trunk Line, J. P. Haynes, Chicago; Pacific Coast, Seth Mann, San Francisco; Northwestern, C. T. Vandover, Minneapolis; Southeastern, A. W. Carey, Birmingham. Following the election, the board of directors chose F. S. Keiser, chairman of the board; and the executive committee chose as its chairman, J. M. Belleville, Pittsburgh, Pa.; vice-chairman, W. H. Chandler, New York. The membership of the League, as reported by Secretary J. H. Beek, is now 922.

A JURY IN THE MUNICIPAL COURT at East St. Louis, Ill., on November 15 decided that smoke from an Illinois Central locomotive standing underneath the eastern approach to the St. Louis Municipal bridge was responsible for a series of automobile collisions that resulted in permanent injuries to Mrs. Mattie Oswald of East St. Louis and awarded her \$5,000 damages in her suit against the railroad. Evidence showed that the accident occurred on the bridge on the night of February 11, 1927, when smoke from the locomotive obscured Mr. Oswald's vision and he was forced to stop the automobile he was driving. The automobile immediately behind the Oswald car bumped it and subsequently a third and a fourth automobile ran into the wreckage of the first two automobiles.

New Books

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian,
Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Annual Report of the Governor of the Panama Canal, 1928. "Commodity movement" (through canal), p. 16-17, "Panama Railroad" p. 43, "Operations with Panama Railroad Funds" p. 48, "Panama Railroad Steamship Lines" p. 48. 134 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., 20 cents.

Ninety Nine Years of Progress. An illustrated historical sketch of the "Best Friend of Charleston" the first locomotive built in America for service, recently reproduced and placed on exhibit by the Southern Railway. 8 p. Pub. by Southern Railway System, Washington, D. C. Apply.

Operating Revenues and Operating Expenses by Class of Service, Class I Steam Railways in the United States, Year Ended December 31, 1927, compiled by Bureau of Statistics, Interstate Commerce Commission. Statement No. 28,150 (First in the series) "Formulas—Table V" p. 34. 34 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., 35 cents.

Economic Situation in the Railway Industry, by Bureau of Railway Economics. Summary of transportation conditions and performance of Class I railways from January 1 to October 1, 1928, reported to American Railway Association and issued as Miscellaneous series bulletin no. 46. 16 p. Pub. by Bureau of Railway Economics, Washington, D. C., Apply.

The External Trade of New England, by Robert J. McFall. "The total trade of New England with all outside regions, both foreign and domestic, for a complete year, as carried by freight car, truck, and boat is shown in the following tables and charts. In so far as possible this trade is shown in terms of tonnage of commodities." p. 2. Domestic Commerce Series Bulletin No. 22 of the Bureau of Foreign and Domestic Commerce. 44 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., 10 cents.

Commerce Yearbook 1928. Vol. I—United States. Vol. II—Foreign Countries, compiled by U. S. Bureau of Foreign and Domestic Commerce. Under the heading "Transportation and Communication" an up-to-date survey of railways and other transportation facilities is given. Pages 584-637 in Vol. I cover the United States, while in Vol. II, 65 countries beginning with Algeria and ending with Yugoslavia, are discussed. On page 717 a comparative table of operating statistics for railways of the world is to be found. Maps in both volumes. Pub. by U. S. Govt. Print. Off., Washington, D. C., \$1.25 per volume.

Transportation Charges in the United States and Canada, by C. S. Duncan and E. F. Bilo. "The object of this survey is to set forth briefly certain essential facts with respect to the production, transportation and marketing of grain in the United States and Canada with special reference to export trade. It is not intended as a criticism of methods or practices or policies in either country. The result is not in fact a comparison so much as a contrast between the two situations. And the primary purpose is to afford the basis for a clearer understanding of conditions as they really are." p. 7. 49 p. Maps. Pub. by Association of Railway Executives, Washington, D. C., Apply.

Periodical Articles

Industrial Research Work by Organized Labor. Purposes and results of research and statistical departments of railroad brotherhoods and other labor organizations. Monthly Labor Review, November 1928, p. 4-9.

The Future of British Railways, by Sir Felix J. C. Pole. "My forecast of the future of British railways is that they are destined for many years not only to remain in existence, but to be the prime movers of all forms of freight and passengers. They will also provide extensive co-ordinated road and rail services..." p. 579-580. The author is General Manager, Great Western Railway (Gt. Brit.) Nineteenth Century, November 1928, p. 573-582.

Looking Backward

Fifty Years Ago

A bill pending in the House of Representatives in aid of the Texas & Pacific provides that the government shall guarantee the interest on not more than \$31,750,000 of bonds for the construction of 1,400 miles of road from Fort Worth, Tex., through to San Diego, Cal. The average cost of the line is estimated at \$36,613 per mile.—*Railway Age*, November 28, 1878.

A construction company has been formed with ample capital to push to completion the construction of the New Orleans Pacific (now part of the Texas & Pacific) between Shreveport, La., and New Orleans. The road between Alexandria, La., and the Mississippi river, near Bayou Goula, about 100 miles, has been graded and negotiations are under way to purchase the existing railroad between the latter point and New Orleans.—*Railroad Gazette*, November 29, 1878.

Twenty-Five Years Ago

Winslow S. Pierce has resigned as general counsel of the Union Pacific. He will continue as general attorney of the Missouri Pacific.—*Railway Age*, December 4, 1903.

The Pennsylvania has issued the first bulletin describing the work to be carried on with the locomotive testing plant to be installed at the Louisiana Purchase Exposition at St. Louis in 1904. It is planned to test 12 different locomotives, no one of which will have a heating surface of less than 2,000 sq. ft. and to allow 14 to 20 days for each locomotive. Each of the 16 to 20 formal tests will involve a run of about 100 miles at varying speeds and cut-off.—*Railroad Gazette*, December 4, 1903.

A sixth trunk line between Chicago and New York may be said to have been added by the extension of the Pere Marquette westward from New Buffalo, Mich., and eastward from Saint Thomas, Ont. The western extension has been affected by building from New Buffalo to Porter, Ind., 22 miles, and making trackage arrangements with the Lake Shore & Michigan Southern (now part of the New York Central) between Porter and Pine, 18 miles, and with the Chicago Terminal Transfer Company (now the Baltimore & Ohio Chicago Terminal), between Pine and the Grand Central station in Chicago. From Saint Thomas eastward, the Pere Marquette has signed an agreement for the use of the Michigan Central tracks to Buffalo, N. Y. Through an alliance with the Lehigh Valley, an entrance is effected into New York.—*Railway Age*, December 4, 1903.

Ten Years Ago

The annual convention of the National Industrial Traffic League, held at Cincinnati, Ohio, on November 20 and 21, expressed a unanimity of sentiment in opposition to government operation of the railroads.—*Railway Age*, November 29, 1918.

William Gibbs McAdoo has resigned as director general of railroads, effective on January 1, 1919. On November 22 he announced his intention to retire to private life and, after a period of rest, to resume the practice of law in New York City. His resignation both as secretary of the treasury and as director general of railroads was accepted by President Wilson on November 21.—*Railway Age*, November 29, 1918.

A temporary restraining order was issued on November 25 in the United States District Court at Toledo, Ohio, against Director General McAdoo instructing the receiver of the Toledo, St. Louis & Western (now part of the New York, Chicago & St. Louis) not to accept cars, sign contracts or to do anything that would jeopardize or compromise the interests of the stockholders. The case involves the acceptance of 1,250 freight cars which the stockholders' protective committee asserts the road does not now need.—*Railway Age*, November 29, 1918.

Odds and Ends of Railroading

It may be interesting to note that Lon Vinyard, section foreman on the Frisco, has taken a few weeks off to attend to his vineyard.

"The Whistling Brakeman," who has performed his specialty over numerous radio stations, is none other than George Nearpass, brakeman on the Pennsylvania. One of his latest performances was over WCCO at St. Paul, Minn., on October 31.

A Pullman Birth

The first visit of the stork to a train reported in a long time occurred on Boston & Albany train 12, eastbound, recently. Mr. and Mrs. Harry L. Kout of Boston are the proud parents. A doctor boarded the train at Pittsfield and an ambulance was ordered at Springfield. Upon arrival at that point, however, the condition of the patients was so good that they rode on to Boston.

Fire-Fighting Fireman

Turning steam from the blow-off valve of their engine on a fire which recently threatened the destruction of a new furniture factory at Festus, Mo., the crew of a Frisco freight train had the fire well under control when the fire department called by the crew, arrived. The fire was discovered when the engine went to the factory to pick up a car.

Ties 100 Years Old

While excavating for the new North Broad street station of the Reading at Philadelphia, workmen came upon four rows of stone railroad ties. These ties are relics of the tracks used by the Philadelphia, Germantown & Norristown in 1832. The light steel rails that were once bolted along each row of stone had been removed, but some of the bolts that were leaded in the stones still remained.

An Ambitious Brakeman

With ambition to become an educator, J. R. Glunt, Pennsylvania yard brakeman at Altoona, Pa., is hard at work attending high school in the hope of bringing his ambition to its realization. Mr. Glunt, who is the father of seven children, one of whom graduated from Altoona High School two years ago, expects to complete his four-year course at that same institution next June. He works on the 3 P. M. to 11 P. M. shift at the yard and thus is able to attend the regular day classes at the high school. He is also a member of the high school glee club.

The Days When a Boss Could Really Express Himself

G. C. Brown, assistant superintendent of the Alton at Slater, Mo., has loaned us a letter which dates back to the good old days of railroading when a boss was a boss. It was written in longhand by a roadmaster of a Southwestern railroad (not the C. & A.) to one of his section foremen and reads as follows:

"Judging from the Condition of your Section I think it very advisable for you to lay that *Boiled Shirt* and *diamond stud buttons* you was wearing to one side. Wearing such clothes indicates you doing very little if any work whatever and the *Condition of your Section* demands your entire attention. You make a very nice appearance indeed out with a gang of men on as rough a Section as you have with white shirt and dressed as though you were going to a *Ball*. I would appreciate your work a good deal more if you would get your Section in Shape, and then make your toilet.

Yours, truly,

A. Lincoln Asks for a Pass

Some 70 years ago Abraham Lincoln, in need of a new annual railroad pass, wrote to an official of the Chicago & Alton at Bloomington, Ill., according to a story in the Bloomington *Pantagraph*, which was reproduced in the Chicago Railway Review of December 28, 1878. The letter, which was at that time in the files of the superintendent's office at Bloomington, was as follows:

"Springfield, Feb. 13, 1858.—R. P. Morgan, Supt. C. & A. R.—Dr. Sir: Says Sam to John, 'Here's your old rotten wheelbarrow. I've broke it usin' on it. I wish you would take it and mend it, ca'se I shall want to borrow it this afternoon.' Acting on this as a precedent, here's your old 'chalked hat.' I wish you would take it and send me a new one, ca'se I shall need to use it the first of March,
Yours truly,
A. Lincoln."

The Three Oldest Commuters

Included in the guests invited to the dinner which was given by the Boston & Maine in connection with the dedication of its new station in Boston, on November 15, were the three oldest season ticket riders on that road, the three oldest enginemen and the three oldest passenger conductors. Of the three commuters, the very oldest, William D. Brackett, who has been traveling between Stoneham, Mass., and Boston for 64 years, and who is now 89 years old, has never missed a train in 44 years. We assume that these 44 years are the 44 latest years, which indicates that a period of 20 years' endeavor may be necessary to enable one to form the habit of never missing. Whether or not Mr. Brackett has ever, because of forgetfulness, allowed his commutation ticket to expire and has been obliged to shell out a cash fare, is an interesting point on which the record is, unfortunately, silent. It is estimated that the money paid by Mr. Brackett for tickets in his long career would aggregate \$6,600.

Frisco Whistle Achieves Fame

The sight and sound of the new Frisco locomotive whistles have now been preserved for posterity. The Fox-Chase Movietone Corporation recently sent a crew from New York



Frisco Whistle Achieves Fame

to St. Louis to take Movietone pictures of these volitone whistles, which play a four-note chime. The pictures were released in the Fox news reel of November 17. This was the first time that sound pictures were taken in St. Louis.



THE TRANSPORTATION CLUB of Louisville (Ky.) will hold its annual business meeting and election of officers in the Kentucky Hotel on December 19.

JAMES GIBSON, a floatman on a New York Central tug in New York Harbor, was the recipient on November 27, of a medal from the railroad company in recognition of his heroism in jumping into the river off Weehawken on September 22, and saving the life of a man who had jumped off another boat, intending suicide.

AMOS A. BETTS of Phoenix, Ariz., a member of the Arizona Corporation Commission since 1916, was re-elected for the third consecutive term at the general election on November 6. Reece A. Caudle of Russellville, Ark., has been elected a member of the Arkansas Railroad Commission, succeeding H. Earhart. Mr. Caudle will take office on January 1.

THE SUPREME COURT of the United States on November 26 granted a motion filed by Donald R. Richberg, counsel for the National Conference on Valuation of American Railroads, for leave to file a brief as amicus curiae in the St. Louis & O'Fallon valuation case, which is set for argument on January 2. The court also assigned the lake cargo coal rate cases for argument, on February 18.

THE CANADIAN RAILWAY CLUB will hold its next meeting on Monday evening, December 10, at the Windsor Hotel, Montreal. There will be a paper on employee education by H. J. Heisler, of the Sleeping, Parlor and Dining Car Department of the Canadian Pacific. Mr. Heisler's paper is the one adjudged best of 124 papers entered in a recent competition. Sir Henry W. Thornton will address the club.

EMPLOYEES OF THE CENTRAL OF GEORGIA, insured in the Metropolitan Life Insurance Company under the group life insurance contract between the insurance company and the railroad, now number about 7,000; and the total amount of their insurance is \$26,504,700. In the five and one-half years during which group life insurance has been in effect on the Central of Georgia, beneficiaries of em-

ployees have received, on death and disability claims, the sum of \$1,476,256; and premiums paid by employees during the same time aggregate \$1,077,939. Adding to this the premium sums contributed by the railway company it appears that railway and employees, together, have paid about \$1,500 less than the total that has been received from the insurance company.

I. C. C. Report on Automatic Train Control

The Interstate Commerce Commission on November 28 made public its report on its investigation of installations of automatic train control devices and block signals deciding that additional installations will not be required at this time. The report, by division of six commissioners, Eastman, McManamy and Taylor, expresses the opinion that vigorous efforts to provide adequate protection against accidents due to grade crossings, derailments and collisions in territory not protected by block signals, failure of wooden bridges and trestles and use of wooden passenger cars will afford a far greater measure of safety than requiring by order special efforts to extend train control installations. Railroads will be expected to be diligent in such efforts to continue study of train stop and train control devices and the Pennsylvania will be expected to proceed with further development of cab signals. The Bureau of Safety will keep in touch with development work being done and progress made.

P. & S. and Mechanical Division Meetings

The annual meetings of the Purchases and Stores Division and of the Mechanical Division of the American Railway Association for 1929, will both be held on the west coast during the month of June. The Purchases and Stores Division will meet at San Francisco, Cal., June 19-21, while the meeting of the Mechanical Division will be held in Los Angeles, Cal., June 25-28. The Railway Supply Manufacturers' Association will not make an exhibit in connection with these meetings, but it is understood that the executive

committee of that organization will hold a meeting at either San Francisco or Los Angeles at about the time of the railroad conventions, and that the representatives of the railway supply manufacturers will be extended a cordial invitation to attend the meetings of the railway associations.

Gold and Silver Banners

The Pennsylvania's gold banners for the best results in safety during the third quarter of the year have been awarded to the Elmira, the Renova, and the Indianapolis divisions, and the South Altoona Foundry. Silver banners go to the Elmira, Wheeling and Indianapolis divisions and South Altoona Foundry. Gold banners are awarded to the division in each of the three operating regions which has the lowest number of casualties to employees per million man-hours, and silver banners to the division which makes the greatest reduction in casualties. The competition is among thirty-eight divisions and five shops. The number of injuries per million man-hours, for the entire System, was 11.5 during the third quarter, as against 10.7 for the second quarter. The Company's goal in its 1928 campaign is the reduction of employee accidents to not more than ten per million man-hours.

Lehigh Valley Opens New Tunnel

The new Musconetcong tunnel on the line of the Lehigh Valley near Pattenburg, N. J., was officially opened to traffic on November 26 when a passenger train enroute from Buffalo, N. Y., and due at the Pennsylvania station, New York, at 10:15 a.m. was the first to pass through it.

The new tunnel parallels an existing one which was built between 1872 and 1875. Since that time, however, the growth in size of locomotives and cars has caused the Lehigh Valley to reduce the old tunnel to single track operation to allow clearance for the heavier locomotives.

The tunnel is 4,895 ft. in length with an inside width of 30 feet while the top is 25 feet above the rails. It has two tracks with clearance for the largest locomotives. Work on the project, which passes through Musconetcong mountain, was begun on April 21, 1926.

Burlington Shop Schools

The Chicago, Burlington & Quincy, following the success of its schools for shop apprentices at West Burlington, Iowa, and Havelock, Neb., has established a third school at its Aurora (Ill.) shops. The new school is divided into three classes, to which pupils have been assigned, as nearly as practicable, according to their previous education. Each class has two sessions a week, from 7 a.m. to 9 a.m. After the first six months, which is to be devoted to foundation work in groups, the apprentices will receive individual instruction. The weekly period is now divided as follows: one hour for training in blueprint reading; one hour for the sketching of miscellaneous objects such as castings, forgings, etc., classed with reference to complexity; one hour of industrial mathematics, and its application to shop work; and one hour of practical shop sketching. Classroom work is graded and monthly reports are made to the superintendent of shops, the superintendent of the Aurora public schools, the supervisor of the Burlington trade schools, and the state supervisor of industrial education. The school is attended by 31 apprentices who receive free instruction and are paid regular wages while attending classes.

Railway Development Association

The American Railway Development Association will hold its twentieth semi-annual meeting at the Congress Hotel, Chicago, on December 6 and 7. At the general session on the first morning, addresses will be presented on Practical Industrial Development by J. C. Erickson, president of Factory and Warehouse Locations, Inc., Chicago; Shipping Breeding Stock by Rail by A. O. Collentine, extension specialist in animal husbandry of the University of Wisconsin, Madison, Wis.; Production of Pulp and Paper in the World's First Commercial Cornstalk Pulp Mill; Market for the Product; Requirements for Future Expansion of this Industry by Frank K. Gardner, general manager of Cornstalk Products Company, Danville, Ill., and Meeting New Conditions in Transporting Agricultural Products by T. C. Powell, president of the Chicago & Eastern Illinois, Chicago.

In the afternoon, the Agricultural and Marketing sections will consider three subjects: The Sugar Industry in the United States, Dumping Agricultural Limestone Along the Right-of-Way, and Report for Recommended Practices Committee on the Policy and Practice of Railroad Demonstration Farms. The Industrial section, in the same afternoon, will discuss: Value of Mapping Undeveloped Mineral Deposits, Co-operation with Power and Utilities Companies in Securing New Industries and Developing an Industrial District.

At the general session on the morning of December 7 addresses will be presented on Co-operative Marketing in Foreign Fields by C. L. Christensen of the U. S. Department of Agriculture, Washington; The Hoch-Smith Resolution from a Railroad Viewpoint by Lewis Jeffrey,

attorney of the Gulf, Colorado & Santa Fe, Galveston, Texas; Status of Reclamation Work in the United States by George C. Kreutzer, director of reclamation economics, Washington, and Selling the Railroad to Railroad Workers by Holcomb Parkes, editor of the Norfolk & Western Magazine, Roanoke, Va. The following subjects will be presented before the Agricultural and Marketing sections in the afternoon: Fundamentals in the Preparation of Educational Exhibits, Agricultural Train Exhibits, Marketing Inspection Trips to Larger Cities, Co-operating with Promotional Organizations in the Operation of Demonstration Trains, and Live at Home Letters. The subjects to be presented at the afternoon session of the Industrial section are: Industry's Right to Use Railroad Station Tracks, Assigning Portions of Station Tracks to Private Car Owners, Track Clearance for Petroleum Products, and Liability of Companies Handling Gasoline.

Meetings and Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings.

AIR BRAKE ASSOCIATION.—T. L. Burton, 165 Broadway, New York City. Next meeting, April 30-May 3, 1929, Stevens Hotel, Chicago. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—Fred Venton, Crane Company, 836 So. Michigan Blvd., Chicago. Meets with Air Brake Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—J. D. Gowin, 112 W. Adams St., Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 S. Michigan Ave., Chicago. Next meeting, June 25, 1929, Denver, Col.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothschild, Room 400, Union Station, St. Louis, Mo. Next annual convention, June 18-21, 1929, Mexico City.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—L. M. Jones, Supt. of Sleeping and Dining Cars, C. M. St. P. & P., Chicago.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 292 Madison Ave., New York. Annual convention, September 1929, Cleveland, Ohio.

AMERICAN RAILROAD MASTER TINNERS' COPPER-SMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borchardt, 202 North Hamlin Ave., Chicago.

AMERICAN RAILWAY ASSOCIATION.—H. J. Forster, 30 Vesey St., New York, N. Y.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York.

Protective Section.—J. C. Caviston, 30 Vesey St., New York. Annual meeting, April 16-18, 1929, Atlanta-Biltmore Hotel, Atlanta, Ga.

Safety Section.—J. C. Caviston, 30 Vesey St., New York. Annual meeting April 23-25, 1929, Claypool Hotel, Indianapolis, Ind.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York. Next convention, Sept. 10-12, 1929, St. Paul, Minn.

Division II.—Transportation.—G. W. Covert, 431 South Dearborn St., Chicago. Next meeting, April, 1929.

Division III.—Traffic.—J. Gottschalk, 143 Liberty St., New York.

Division IV.—Engineering.—E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Annual convention, March 5-7, 1929, Palmer House, Chicago. Exhibit by National Railway Appliances Association.

Construction and Maintenance Section.—E. H. Fritch.

Electrical Section.—E. H. Fritch.

Signal Section.—H. S. Balliet, 30 Vesey St., New York. Next meeting, March 4-5, 1929, Hotel Stevens, Chicago.

Division V.—Mechanical.—V. R. Hawthorne, 431 South Dearborn St., Chicago,

Ill. Annual meeting, June, 1929, Los Angeles, Cal. Exhibit by Railway Supply Manufacturers' Association.

Equipment Painting Section.—V. R. Hawthorne, 431 South Dearborn St., Chicago. Annual meeting, 1929, Kansas City.

Division VI.—Purchases and Stores.—W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII.—Freight Claims.—Lewis Pilcher, 431 South Dearborn St., Chicago.

Ill. Annual meeting, May 21-24, 1929, Hotel Willard, Washington, D. C.

Division VIII.—Motor Transport.—George M. Campbell, American Railway Association, 30 Vesey St., New York, N. Y.

Car Service Division.—C. A. Buch, 17th and H Sts., N. W., Washington, D. C.

AMERICAN RAILROAD BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. Ry., 319 N. Waller Ave., Chicago. Annual convention, 1929, New Orleans, La. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—R. G. East, Agricultural Agent, Pennsylvania Railroad, Shelbyville, Ind. Semi-annual meeting, December 6-7, 1928, Congress Hotel, Chicago. Annual meeting, May 22-24, 1929, Houston, Tex.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association, Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Annual convention, March 5-7, 1929, Palmer House, Chicago. Exhibit by National Railway Appliances Association.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—Miss Page Nelson Price, Norfolk & Western Magazine, Roanoke, Va.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association. Secretary: E. H. Lunde, Federal Machinery Sales Co., Chicago.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—T. F. Whittelsey, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Railroad Division, Marion B. Richardson, 30 Church St., New York. Annual meeting, Dec. 3-7, 29 W. 39th St., New York.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 228 N. LaSalle St., Chicago. Annual meeting, January 22, 1929, Louisville, Ky.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, District Claim Agent, Northern Pacific Ry., St. Paul, Minn. Next meeting, June 19-21, 1929, Detroit, Mich.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 413, C. & N. W. Station, Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Stanley J. Strong, 17th and H Sts., N. W., Washington, D. C.

ASSOCIATION OF RAILWAY SUPPLY MEN.—E. H. Weaver, Westinghouse Air Brake Co., 80 E. Jackson Blvd., Chicago. Meets with International Railway General Foremen's Association.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—Annual exhibit at convention of American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 129 Chatham St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2nd Monday in month, except June, July and August, Great Northern Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, 514 East Eighth St., Los Angeles, Calif. Regular meetings, second Friday of each month, 514 East Eighth St., Los Angeles.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—A. J. Walsh, 5874 Plymouth, Apt. 18, St. Louis, Mo. Meetings, first Tuesday of each month, except July and August, Broadview Hotel, East St. Louis, Ill.

CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2nd Thursday each month, except June, July, August, Hotel Statler, Buffalo, N. Y.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—(See Master Car Builders' and Supervisors' Association.)

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 811 Union Central Bldg., Cincinnati, Ohio. Meetings, 2nd Tuesday in February, May, September and November.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings, first Monday each month, except July, August, September, Hotel Hollenden, Cleveland.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Next meeting, August 20-22, 1929, Fort Shelby Hotel, Detroit, Mich. Exhibit by International Rail-

road Master Blacksmith's Supply Men's Association.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—W. W. Criley, Ajax Mfg. Co., Cleveland, O.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—L. G. Plant, 80 E. Jackson Blvd., Chicago. Next meeting, May 7-10, 1929, Hotel Sherman, Chicago. Exhibit by International Railway Supply Men's Association.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—S. A. Witt, Detroit Lubricator Co., 820 S. Michigan Blvd., Chicago. Meets with International Railway Fuel Association.

MASTER BOILER MAKER'S ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York. Annual meeting, May 21-24, 1929, Hotel Biltmore, Atlanta, Ga.

MASTER CAR BUILDERS' AND SUPERVISORS' ASSOCIATION.—A. S. Sternberg, Belt Ry. of Chicago, Polk and Dearborn Sts., Chicago.

NATIONAL ASSOCIATION OF RAILROAD TIE PRODUCERS.—Roy M. Edmonds, 1252 Syndicate Trust Bldg., St. Louis, Mo. Annual convention, April 23-25, 1929, Arlington Hotel, Hot Springs, Ark.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—James B. Walker, 279 Madison Ave., New York. Next convention, Aug. 27, 1929, Glacier National Park.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. W. Kelly, 1014 South Michigan Ave., Chicago. Exhibit at A. R. E. A. convention.

NATIONAL SAFETY COUNCIL.—Steam Railroad Section: A. W. Smullen, C. M. St. P. & P., Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings 2nd Tuesday in month, excepting June, July, August and September, Copley-Plaza Hotel, Boston, Mass.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Annual dinner, December 13, Hotel Commodore, New York. Regular meetings, 3rd Friday in month, except June, July, and August.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings 2nd Tuesday in month, alternate in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C. Annual meeting, April 30-May 3, Hotel Cleveland, Cleveland, O.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 1406 Packard Bldg., Philadelphia, Pa.

RAILWAY CAR DEPARTMENT OFFICERS' ASSOCIATION. (See Master Car Builders' and Supervisors' Association.)

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago. Meets with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—F. W. Venton, Crane Co., 836 S. Michigan Ave., Chicago. Meets with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division and Purchases and Stores Division, American Railway Association, June, 1930.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York. Meets with Telegraph and Telephone Section of A. R. A., Division I.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supv. Road, Baltimore & Ohio, Pittsburgh, Pa. Exhibit by Track Supply Association. Next convention, Stevens Hotel, Sept. 19-21, 1929, Chicago.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings 2nd Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmonds, West Nyack (Rockland Co.), N. Y. Meets with A. R. A. Signal Section.

SOUTHEASTERN CARMEN'S INTERCHANGE ASSOCIATION.—Clyde Kimball, Inman Shops, Atlanta, Ga. Meets semi-annually.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3rd Thursday in January, March, May, June, September and November, Ansley Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & A. Ry., Atlanta, Ga.

TRACK SUPPLY ASSOCIATION.—L. C. Ryan, Oxweld Railroad Service Co., 80 E. Jackson Blvd., Chicago. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, Gen. Supt., R. S., New York Central, Buffalo, N. Y. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—W. J. Dickinson, 189 West Madison St., Chicago. Regular meetings, 3rd Monday each month, except June, July and August.

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Traffic

Shipments of Portland cement in the United States in 1928 totaled 175,000,000 bbl., according to an estimate made by G. S. Brown in an address at the annual meeting of the Portland Cement Association at Chicago on November 21. This is greater than the amount shipped in 1927 but is a smaller increase than was recorded in 1926 and 1927.

The Fort Worth & Denver City opened its South Plains extension, from Estelline, Texas, to Dimmitt and Lubbock, to freight and passenger traffic on November 23. The "West Texan" now leaves Dallas at 6:45 p.m. and arrives at Lubbock at 8:20 a.m. and Plainview at 7:20 a.m. the next morning. Returning it leaves Plainview at 8:00 p.m. and Lubbock at 7:00 p.m. and arrives in Dallas at 8:10 a.m.

Regional Advisory Boards in December

The following regional advisory boards will meet in December: the Ohio Valley Regional Advisory Board on December 6 at Cincinnati, Ohio; the Southeast Shippers Advisory Board on December 7 at Jacksonville, Fla.; the Central Western Shippers' Advisory Board on December 12 at Ogden, Utah; the Allegheny Regional Advisory Board on December 13 at Pittsburgh, Pa.; the Pacific Northwest Transportation Advisory Board on December 14



Office Buildings of the Southern Railway, Atlanta, Ga., Looking West.—Atlanta Terminal Station at the Right

at Portland, Ore.; and the Pacific Coast Transportation Advisory Board on December 14 at San Francisco, Cal.

Canada's Traffic a Record

Railway traffic continues to expand in Canada. For the two weeks ending November 10 it showed a net gain over the corresponding period of last year of 27,039 loaded cars. This must be compared with a betterment of 11,544 for the two weeks' period ended October 27. For five consecutive weeks loadings have exceeded the 90,000 mark, with an average of 94,113. Nothing approaching this had happened before in the history of Canadian Class A railways.

Up to November 10 the increase for the Dominion over 1927 was 278,046 loaded cars. Toward this total grain and grain products contributed 122,397, lumber 857, pulpwood 5,797, other forest products 10,412, ore 11,319, merchandise 37,018, and miscellaneous 72,592. The decreases were 2,787 in live stock, 1,600 in coal, 1,467 in coke, and 3,508 in pulp and paper.

There has been a sustained strength in merchandise and miscellaneous. For the two weeks ended November 10 the increase of 11,270 carloads was made up by a gain of 7,785 in the eastern division and 3,485 in the western.

New York Central Offers Commuters New Unlimited Ticket

A new form of commutation ticket for the New York zone good for any number of trips and for any length of time the purchaser desires to pay for will be inaugurated by the New York Central and West Shore with the beginning of the new year. At the same time one-day round-trip tickets, designed to encourage travel by suburban families, will be placed on sale at a reduction from regular rates.

The new commutation tickets will be in card form resembling a pass, and with an identification photograph which will be placed in a special case. This pass will be honored by the road as long as the ticket holder is in good condition and the photograph identifies the purchaser. The photographs will be supplied without charge by the railroad. This enables the commuter to purchase tickets good for any number of months for which he desires to pay at the regular monthly commutation rates. The new cards will be the first tickets issued in many years for which punching will not be required.

A new type of 50-trip family ticket to be issued will be in coupon form, but will require only the signature of the purchaser to make it valid. It will be confined to the purchaser and members of his household.

Frisco Referendum on Motor Coach Regulation

Patrons of the St. Louis-San Francisco residing in the nine-state territory served by that railway desire regulation of motor coach and truck traffic now operating in direct competition with Frisco passenger and freight trains. This is indicated

by the signatures of business men to a petition circulated by employees of the road, asking Congress for a "just and fair" regulation of automotive competition. A total of 30,000 signatures of business and professional men, farmers, employees of industries, state, county and city officers and other responsible persons were received.

About 12,000 Frisco employees signed a similar petition, requesting Congress to protect their jobs.

J. M. Kurn, president, in discussing the outcome said, "The results have been excellent in that we have been given a satisfying testimonial from business interests that they are in sympathy with our efforts to place competition between the railroads and the buses on a fair basis. By affixing their signatures to this petition, these 30,000 friends and patrons of our railroad inform Congress that they want proper protection against financial irresponsibility, careful inspection of vehicles, and other regulatory measures."

The petitions were distributed to Frisco employees, with one request, by the management; namely that only responsible persons should be asked to sign.

Missouri produced 13,860 signatures, Oklahoma 7,349 signatures, Arkansas 4,101, and Kansas 2,816 signatures. The larger cities on the Frisco were not heavily canvassed and the great majority of the signers were residents of the smaller cities and towns.

Stations in New Jersey Discontinued

The Board of Public Utility Commissioners of New Jersey has approved the petition of the New York, Susquehanna & Western for leave to abandon its agency at Crystal Lake, the volume of business having fallen off greatly, and the railroad company and certain objectors having reached an agreement on the maintenance of the station as a non-agency station.

The board has authorized the Wharton & Northern to discontinue passenger train service on its line. This line, 10 miles long, between Wharton and Green Lake, operates one mixed train each way daily, except Sunday. The passenger revenue has been only 14 cents a day, while the cost of operating the train is six dollars a day more than if it were run for freight alone.

The Board has considered the applications of the Pennsylvania for authority to discontinue 14 non-agency stations, namely Yellow Brook, Hoffman, Reeves, Brown, (Medford Branch), Dudley, Taylor, Brown (Middlesex County), Holwell, Lewiston, Ellis, Shreve, Dix Haven, Scudder's Falls and Moore.

Several of these stations are for freight only and most of the petitions are approved. At Hoffman, passenger facilities may be discontinued but the station must be continued for freight. At Shreve, the petition is disapproved, as there is one passenger who has a 50-trip ticket and desires to use it. The Board calls upon the road to restore the flag stop at this station for the train leaving Camden at 4:14 p. m. At Moore, freight facilities must be continued but those for passengers may be cut off.

Equipment and Supplies

Freight Cars

THE MONTGOMERY RAILROAD has ordered 10 caboose cars from the Standard Steel Car Company.

THE FRUIT GROWERS EXPRESS, reported in the *Railway Age* of November 24 as inquiring for 50 underframes, is now inquiring for from 50 to 200 underframes.

THE WARNER QUINLAN COMPANY, New York, has ordered 10 insulated tank cars of 10,000-gal. capacity from the General American Tank Car Corporation.

THE ARMOUR CAR LINES, Chicago, have ordered 500 underframes from the Bettendorf Company. Inquiry for this equipment was reported in the *Railway Age* of November 17.

THE CHICAGO & NORTH WESTERN has ordered 300 flat cars from the Pressed Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of November 10.

THE MUKDEN-HAILUNG, Mukden, Manchuria, has ordered steel parts for 60 steel underframe high side gondola cars and 40 steel underframe box cars of 33½ tons' capacity from the Pressed Steel Car Company.

Passenger Cars

THE LEHIGH VALLEY is inquiring for two gas electric rail motor cars with baggage compartment 72 ft. long and for four trailer cars.

THE SOUTHERN PACIFIC (Louisiana & Texas lines) is inquiring for one combination baggage and mail gas-electric rail motor car.

THE CHESAPEAKE & OHIO has ordered one Model 55 combination passenger and baggage gasoline rail motor car from the J. G. Brill Company. This is in addition to six cars placed with the same builder and reported in the *Railway Age* of November 24.

Signaling

THE LEHIGH VALLEY has contracted with the General Railway Signal Company for the installation of car retarders at its westbound yard at Coxtown, Pa., including 11 retarders, 17 switch machines, and 17 skate machines. All functions will be controlled from one tower. Alternating current track circuits will be provided for detector locking through switches.

THE ERIE has contracted with Union Switch and Signal Company for the installation of automatic block signals from Buchanan Junction, Pa., to Salamanca, N. Y., 106 miles, 86 double track, 20 single track. Color light signals will be used. The contract includes new interlocking at Salamanca with 12 mechanical levers and five electric.

Iron and Steel

THE WABASH is asking for prices on its 1929 rail requirements.

THE CHICAGO & NORTH WESTERN is expected to order 28,000 tons of rail within the next few days.

THE MISSOURI-KANSAS-TEXAS has ordered 4100 tons of rails from the Tennes-

see Coal, Iron & Railroad Company, 2400 tons from the Bethlehem Steel Company, 2000 tons from the Illinois Steel Company and 1500 tons from the Inland Steel Company.

Machinery and Tools

THE MISSOURI PACIFIC is inquiring for three gantry cranes.

THE ERIE has ordered two 25-ton locomotive cranes from the Industrial-Brownhoist Corporation.

THE NILES-BEMENT-POND COMPANY has received orders for railroad equipment machine tools, including a 100-ton bushing press, a 5,000-lb. double frame steam hammer and a 36 to 44-in. side head boring mill.

Supply Trade

A. J. Hess, assistant manager of the cold-rolled strip and spring department of the American Steel & Wire Company, has been promoted to manager to succeed H. S. Durant, resigned.

Alonzo J. Hammond, formerly assistant chief engineer of the Chicago Union Station has opened a consulting engineering office at 120 South La Salle street, Chicago, to engage in general engineering practice.

The Allis-Chalmers Mfg. Co., Milwaukee, Wis., will construct a one-story 200-ft. by 600-ft. shop addition to its tractor division at West Allis. Plans are also being prepared for additions to its tractor division works at Springfield, Ill.

Albert N. Dingee has been appointed advertising manager of the Electric Storage Battery Company, Philadelphia, Pa., to succeed the late Alfred B. Kreitzburg. Mr. Dingee has been in the sales department of the company for the past 18 years.

Charles H. Quinn, 681 Market street, San Francisco, Cal., has been appointed San Francisco representative of the Ewald Iron Company, Inc., Louisville, Ky., in connection with the sale of its staybolt iron and engine bolt iron.

H. N. Felton, branch manager of the Milwaukee, Wis., office of the Wagner Electric Corporation, St. Louis, Mo., has been transferred to the New York office and will be succeeded by F. T. Coup, who has been in charge of the Cincinnati, Ohio, office. Paul Forsyth, representative, will succeed Mr. Coup.

The International Combustion Engineering Corporation, New York, has closed a contract with the Lukens Steel Company, Coatesville, Pa., which provides for the building of a low temperature coal carbonization plant at Coatesville.

The New York office of the USL Battery Corporation, Niagara Falls, N. Y., is now located at 5617 Grand Central Terminal building, with W. W. Halsey manager in charge. P. M. Williams will handle the USL Battery Corporation's railroad business, with office at 323 West Polk street, Chicago.

E. E. Calvin who retired as vice president in charge of operation of the Union Pacific on November 1, has been elected secretary of the Cavlin Supply Company, Los Angeles, Cal., dealers in railway supplies and materials. This company has moved its headquarters and enlarged its facilities by leasing a warehouse at 371 West Third street.

The Industrial Brownhoist Corporation, Cleveland, Ohio, has purchased the complete line of Massillon hammers formerly manufactured and sold by the Massillon Foundry & Machine Company. Production of Massillon hammers, as well as trimming presses and bar shears is now going forward at the Cleveland plant of the corporation.

The Foote Bros. Gear & Machine Company, Chicago, has purchased the Lyle Culvert & Road Equipment Company, the Stockland Road Machinery Company, the Northwestern Steel & Iron Corporation, all of Minneapolis, Minn., and the Bates Manufacturing Company, Joliet, Ill. The latter companies will be operated as divisions of the parent company.

W. M. Garrigues, assistant general manager of sales of the Central Alloy Steel Corporation, Massillon, Ohio, has been appointed general sales manager. M. H. Schmid, assistant sales manager of the alloy division has been made sales manager of the bar and billet division. J. S. Andrews, assistant district sales manager at Detroit, has been made assistant sales manager of the sheet and strip division at Massillon.

R. H. Hoy, division sales manager of the Universal Portland Cement Company, with headquarters at Pittsburgh, Pa., has been promoted to sales manager with the same headquarters and will be succeeded by F. A. Brine. N. A. Kelly, division sales manager at New York, has been promoted to sales manager. J. K. Hallock, division sales manager at Pittsburgh, has been promoted to assistant sales manager. W. H. McDowell, sales agent at Cleveland, has been promoted to division sales manager at Pittsburgh, Pa.

Sidney G. Johnson has been appointed assistant to the president of the General Railway Signal Company, reporting to Paul Renshaw, vice president, with headquarters in New York effective December 15. Mr. Johnson has been active in the signaling field for the past 32 years. He was with the Standard Railway Signal Company 15 years, and the Union Switch & Signal Company six years. He was with General Railway Signal Company for several years until 1920 when he became president of the Johnson Railway Supply Corporation. He returned to the General Railway Signal Company January 1st, 1927 as special representative.

The Union Asbestos & Rubber Company has appointed J. H. Kuhns vice-president in charge of railroad sales, W. R. Gillies vice-president in charge of production and development and R. Wild vice-president in charge of commercial sales. After several years of railroad experience in various departments of the Illinois Central, Mr. Kuhns entered the employ of the Republic



J. H. Kuhns

Rubber Company in 1908 as western manager of railroad sales. Later he was promoted to manager in charge of all railroad sales. He resigned in 1920 to become vice-president in charge of central and eastern railroad sales, which position he has held until his recent appointment, whereby his jurisdiction has been extended to include all railroad sales. Mr. Gillies entered railroad service as a machinist apprentice with the Missouri-Kansas-Texas in 1896. Later he became mechanical engineer of the Oregon Short Line at Pocatello, Idaho. He held this position until 1919 when he resigned to become assistant to the president of the Union

Asbestos & Rubber Company. In this position he has served as sales representative in the western territory until his recent appointment which places him in charge of the factory at Cicero, Ill. Mr. Wild entered the employ of the



W. R. Gillies

Cape Asbestos Company of London, England, and South Africa in 1902 and later became manager with headquarters in London. He held this position until 1919 when he left England and entered the asbestos manufacturing field in the



R. Wild

New England states. In 1923 he became associated with the U. S. Asbestos Company with headquarters in Manheim, Pa., which position he has held until his recent appointment as vice-president of the Union Asbestos & Rubber Company.

Trade Publication

STRAIGHT LINE TRUCKING.—A booklet with this title has been issued by the Stuebing Cowan Company, Cincinnati, Ohio, in collaboration with its railroad representatives, Leeds, Tozzer & Co., Inc., New York City, which describes the use of the lift truck platform system of trucking by the railways and other common carriers. This booklet, which consists of 16 pages, is highly illustrated with views of material handling in the stores department, mechanical shops and at terminals.

Construction

DELAWARE, LACKAWANNA & WESTERN.—This road has awarded a contract for the construction of the foundation and superstructure and providing the mechanical equipment for its new terminal warehouse at Jersey City N. J., to the Turner Construction Company, New York. Work will be started immediately and the warehouse is expected to be ready for service about November, 1929. The project was described in the *Railway Age* of October 6.

LOUISVILLE & NASHVILLE.—Company forces have begun the construction of a bridge over the Kentucky river at Frankfort, Ky., which will consist of one 52-ft. deck girder span, one 140-ft. through truss span and one 317-ft. through truss span with 700 ft. of concrete retaining walls. A contract for the construction of a passenger station at Bay St. Louis, Miss., has been let to Lionel F. Favret, New Orleans, La.

NEW YORK, NEW HAVEN & HARTFORD.—Bids have been received by this road for the construction of the superstructure for an addition to its present Fargo street freight station, Boston, Mass. The project will cost approximately \$150,000. A contract has been awarded the Trendenick-Billings Company of Boston, Mass., for the construction of the foundation for the same addition at a cost of about \$25,000.

NORTHERN PACIFIC.—Company forces are engaged in placing the foundation for the construction of a car shop at Laurel, Mont. A contract for furnishing and erecting the steel frame work has been let to the Industrial Contracting Company, Minneapolis, Minn. It is expected that a contract for the construction of the remainder of the building will be awarded in time to allow work to start on April 1. The total cost of the project is estimated at \$175,000.

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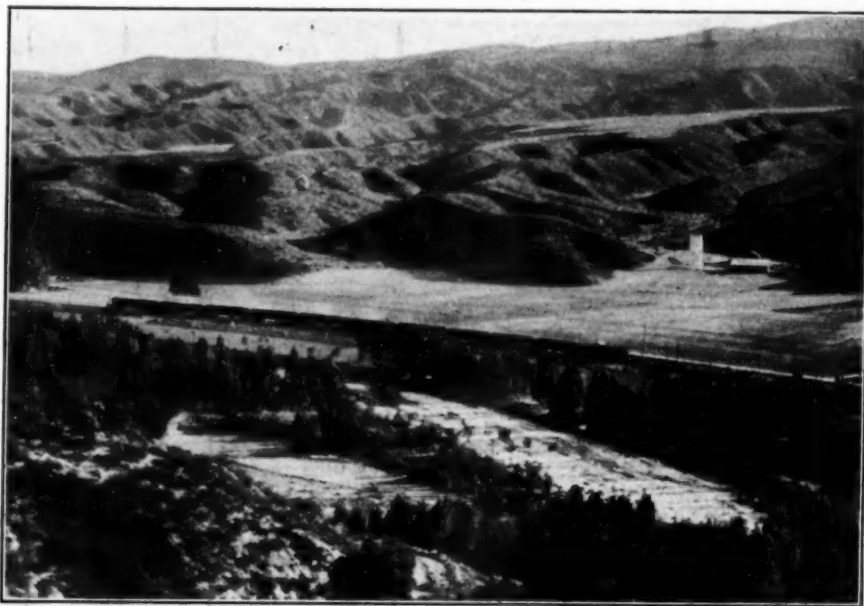
MISSOURI PACIFIC.—The City of St. Louis (Mo.) has prepared plans for the construction of a reinforced concrete viaduct, 1,500 ft. long and 60 ft. wide, over the tracks of this company and the River Des Peres between Way and Eveline streets. The cost of the structure is estimated at \$475,000.

PENNSYLVANIA.—A contract for the laying of track on its Newark bay bridge and approaches at Greenville, N. J., has been awarded by this road to Henry Steers, Inc., New York. The total cost for the work will be about \$65,000. A second contract for the construction of a subway under the Dix-Toledo highway, at Lincoln Park, Mich., at a cost of about \$50,000, has been given to the Mark R. Hanna Co., Detroit, Mich., while a third, calling for the reconstruction of an overhead bridge at Harvard avenue, Cleveland, O., at an approximate cost of \$40,000, has been awarded the Stevens Construction Co., Cleveland, O. The Brown-King Construction Co., Philadelphia, was also given a contract for building an overhead bridge to eliminate a grade crossing at Malaga, N. J.

SOUTH PLAINS & SANTA FE.—This company has applied to the Interstate Commerce Commission for authority to build an extension from Seagraves, Tex., to a point in the southeastern part of Lee county, N. M., 66 miles, to be operated by the Panhandle & Santa Fe.

TELKWA-KITIMAT.—This company has made application for incorporation in the Province of British Columbia and will ask the next session of the provincial legislature for permission to construct a railway from Telkwa, B. C., through Copper City to Kitimat arm on the Pacific coast in order to develop coal areas and other natural resources.

* * * *



On the Southern Pacific

Financial

BALTIMORE & EASTERN—Authority to operate and issue.—The Interstate Commerce Commission has authorized this company to acquire the line from Chai-borne to Ocean City, Md., 88 miles formerly operated by the Baltimore Chesapeake & Atlantic, and sold under foreclosure. Authority has been granted the company to issue \$650,000 of \$50 par common stock to be sold to the Pennsylvania at not less than par and proceeds used to acquire the railroad in question.

BALTIMORE & OHIO.—Western Maryland Stock.—The Business Protective Association, of Baltimore, has filed with the Interstate Commerce Commission a complaint asking the commission to require the Baltimore & Ohio to divest itself of its stock in the Western Maryland on the ground that it is held in violation of Sections 1 and 5 of the interstate commerce act. Complainant asks that the proceeding be consolidated with that instituted by the commission under the Clayton act.

CHESAPEAKE & OHIO.—Acquisition of Pere Marquette Stock.—This company's application for a modification of the order by which the Interstate Commerce Commission authorized it to acquire control of the Pere Marquette, so that it may pay \$133.33 a share for 174,900 shares of P.M. common stock held by the New York, Chicago & St. Louis, instead of \$110 as authorized by the commission, came up for hearing on November 26 at Washington before Director Mahaffie of the commission's Bureau of Finance, but at the request of counsel for the C. & O. minority stockholders an adjournment was taken to the following day and then a further adjournment was taken to December 3 at the request of C. & O. counsel. The company also asked a modification of the order so that it may issue 300,000 shares of C. & O. common stock at par to its stockholders, instead of 200,000 shares at \$150 as authorized by the commission. Intervening petitions in support of the C. & O. application were filed by the state commissions of Virginia, West Virginia and Kentucky, several associations of coal operators, the chambers of commerce of Richmond, Va., and Charleston, W. Va., and the attorneys general of the three states. They were granted by Director Mahaffie.

CHICAGO PRODUCE TERMINAL.—Acquisition and construction.—The Interstate Commerce Commission has authorized this company to acquire terminal facilities in Chicago including 23 miles of track and to construct a similar amount of track and other facilities; and to issue \$12,000,000 of common stock to be sold at not less than par to the Atchison Topeka & Santa Fe and the Illinois Central, which will share jointly in its control.

CHICAGO, ROCK ISLAND & PACIFIC.—Abandonment.—The Interstate Commerce Commission has authorized this company

to abandon a line from Iowa City, Iowa, to Elmira, nine miles.

EDMONTON, DUNVEGAN & BRITISH COLUMBIA.—C. N. R. to Share in Control.—Sir Henry Thornton, president of the Canadian National, announced in Montreal on November 26, following a meeting of the board of directors, that that road had decided to take advantage of the proposal of joint purchase with the Canadian Pacific of the Edmonton, Dunvegan & British Columbia, the line joining Edmonton, capital of Alberta, with the Peace river country. It was found, after examination by Canadian National experts, that it would cost that road \$13,000,000 to build a line of its own into the Peace river region. The Edmonton line and the Alberta Great Waterways road, another involved in the joint purchase from the Alberta government, will be immediately brought up to main line standard. The details regarding operation will be worked out by the Canadian Pacific and Canadian National. Branch lines will be built to meet the requirements of settlement of that country.

GRAHAM COUNTY.—Stock.—The Interstate Commerce Commission has authorized this company to issue \$165,200 of common stock to be sold at par.

MANISTEE & NORTHEASTERN.—Acquisition.—This company has applied to the Interstate Commerce Commission for authority to acquire control by a new lease of the Leelanau Transit Company succeeding the arrangement by which it has operated the property for several years.

MANUFACTURERS RAILWAY.—Operation in St. Louis.—The Interstate Commerce Commission has authorized this company to operate over a portion of a yard of the St. Louis Transfer which is owned by the municipality but operated by the Terminal Railroad Association and to operate over the municipal bridge.

MINARETS & WESTERN.—Securities.—The Interstate Commerce Commission has authorized this company to issue \$1,950,000 of stock and \$1,500,000 of first refunding mortgage 5½ per cent bonds, both to be sold or exchanged at not less than par, to pay off outstanding indebtedness.

NEW YORK, NEW HAVEN & HARTFORD.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to abandon the ferry across the Acushnet river between Fairhaven and New Bedford, Mass.

NEW YORK, CHICAGO & ST. LOUIS.—Bonds.—The Interstate Commerce Commission has authorized this company to issue \$11,275,000 of 4½ per cent refunding mortgage bonds series C, said bonds to be sold at not less than 91 and proceeds used to reimburse the treasury for capital expenditures. Issue of these bonds to be held in the company's treasury was heretofore authorized and sale is now permitted to add to cash.

SARDIS & DELTA.—Abandonment.—This company has applied to the Interstate Commerce Commission for authority to

abandon its line from Sardis to Baptist, Miss., 16 miles.

SOUTHERN PACIFIC.—Acquisition.—This company has applied to the Interstate Commerce Commission for authority to acquire and operate a line from North Branch to Kentucky House, Calif., 4 miles.

SOUTHERN PACIFIC.—Abandonment.—The Interstate Commerce Commission has authorized this company to abandon a ten mile portion of its Airlie branch in Oregon between Perrydale and Dallas and another nine mile portion between Monmouth and Airlie.

TEXAS & NEW ORLEANS.—Construction application denied.—The Interstate Commerce Commission has denied the application of this company and Morgans Louisiana & Texas to construct three miles of line near Morvant, La. The proposed construction would have reached two sugar factories now served by another railroad.

WESTERN PACIFIC.—Securities.—The Interstate Commerce Commission has authorized this company to issue \$800,000 of non-cumulative 6 per cent preferred stock and \$572,000 of first mortgage 5 per cent bonds, both stock and bonds to be sold to the highest bidder at not less than par for the stock and at not less than 99 for the bonds. Proceeds are to be advanced to the Sacramento Northern for the acquisition of the San Francisco-Sacramento and the Sacramento Northern will deliver to the Western Pacific \$1,372,000 of its 5¼ per cent promissory notes as evidence of the indebtedness.

Valuation Reports

The Interstate Commerce Commission has issued final valuation reports finding the final value for rate-making purposes of the property owned and used for common-carrier purposes as of the respective valuation dates as follows:

St. Paul Bridge & Terminal..... \$474,448 1919
Asherton & Gulf..... 279,225 1917

Dividends Declared

Boston & Albany.—2¼ per cent, quarterly, payable December 31 to holders of record November 30.

Chicago, Rock Island & Pacific.—Common, 1½ per cent, quarterly, 6 per cent Preferred, 3 per cent, semi-annually, 7 per cent Preferred, 3½ per cent, semi-annually, all payable December 31 to holders of record December 7.

Consolidated Railroads of Cuba.—Preferred, 1½ per cent, quarterly, payable January 2 to holders of record December 10.

Cuba Northern.—Common, \$4.40, payable December 28 to holders of record December 28a.

Gulf, Mobile & Northern.—Preferred, 1½ per cent, quarterly, payable January 2 to holders of record December 15.

Illinois Central.—Leased Lines.—2 per cent, payable January 2 to holders of record December 11 to January 5.

Missouri-Kansas-Texas.—Preferred, 1¾ per cent, quarterly, payable December 31, to holders of record December 15.

Mobile & Birmingham.—Preferred, 2 per cent, payable January 2 to holders of record December 2 to January 1.

Norfolk & Southern.—1¼, semi-annually, payable January 3 to holders of record December 20.

Reading.—Second Preferred, \$.50, quarterly, payable January 10 to holders of record December 20.

Average Price of Stocks and of Bonds

	Last Nov. 27	Last week	Last year
Average price of 20 representative railway stocks.	130.91	129.88	120.66
Average price of 20 representative railway bonds..	94.15	94.34	97.05

Officers

Executive

R. J. Bowman, assistant to the president of the Erie, with headquarters at New York, has been appointed assistant vice-president, with the same headquarters.

Robert E. Woodruff, general manager of the Erie, with headquarters at Hornell, N. Y., has been appointed assistant vice-president in charge of transportation, with headquarters at New York, succeeding **Augustus E. Ruffer**, deceased. Mr. Woodruff will in turn be succeeded as general manager by **Forrest W. Rosser**, assistant general manager, with headquarters as before at Hornell, N. Y.

Financial, Legal and Accounting

H. S. Prentiss Nichols, assistant general counsel of the Pennsylvania, will retire from active railroad service on December 1, under the company's pension plan, after having served with that road for more than 21 years. Mr. Nichols was born on November 2, 1858, at Columbia, Lancaster County, Pa. He was educated in the schools of Bucks County and Philadelphia and the University of Pennsylvania. From 1884 to 1907 he was engaged in the practice of law, entering railway service in December, 1907, as assistant general counsel of the Pennsylvania, in which position he served until his retirement.

Traffic

John H. Colley has been appointed assistant to the passenger traffic manager of the New York Central, with headquarters at Chicago.

Harry Parry, who has been appointed assistant passenger traffic manager of the New York Central, Line Buffalo and East, with headquarters at New York, first entered railroad service in 1885 as assistant city passenger and ticket agent of the New York Central at Buffalo. Four years later he was appointed city passenger and ticket agent at the same point. In 1897 he was appointed general agent, later being promoted to the position of assistant general passenger agent at Buffalo. He was transferred to New York in 1918 as general passenger agent, which position he held at the time of his recent appointment.

Joseph S. Hall, who has been promoted to general passenger agent of the New York Central, with headquarters at Cleveland, Ohio, entered railway service in November, 1882, as a ticket clerk

in the depot ticket office of the Michigan Central at Detroit, Mich. Later he was transferred to Battle Creek, Mich., and then advanced to district passenger agent at Jackson, Mich. In 1903 he was transferred to Detroit where he remained until 1908, when he was promoted to assistant general passenger agent at the



Joseph S. Hall

same point. Mr. Hall was appointed general agent of the Lake Erie & Western (now part of the New York, Chicago & St. Louis), with headquarters at Indianapolis, Ind., in 1912, becoming chief assistant general passenger agent of the New York Central, with headquarters at Cleveland, in 1920, a position held until his recent promotion to general passenger agent.

Mechanical

O. S. Jackson, superintendent of motive power and machinery of the Union Pacific, with headquarters at Omaha, Neb., has been promoted to general superintendent of motive power and ma-



O. S. Jackson

chinery of the Union Pacific System with headquarters at the same point, a newly created position. Mr. Jackson's promotion and the promotion of J. W.

Burnett, assistant superintendent of motive power and machinery of the Union Pacific, as his successor became effective on December 1. Mr. Jackson was born on a farm near Huntington, Ind., in 1875 and at the age of 14 years entered railway service as a water boy on a railroad that is now a part of the Cleveland, Cincinnati, Chicago & St. Louis. Later he became a section hand on the Big Four and then entered the mechanical department of the Erie at Huntington. From 1897 to 1905 Mr. Jackson served in various positions in the mechanical department of the Big Four, then being appointed general foreman on the Chicago, Indianapolis & Louisville. In 1909 he was promoted to master mechanic at Lafayette, Ind., where he remained until 1913, when he was appointed superintendent of motive power of the Chicago, Terre Haute & South Eastern (now a part of the Chicago Milwaukee, St. Paul & Pacific), with headquarters at Terre Haute, Ind. In the following year he was promoted to general superintendent in charge of both the mechanical and transportation de-



J. W. Burnett

partments, with the same headquarters. Mr. Jackson entered Union Pacific service in September, 1921, as assistant superintendent of motive power and machinery, with headquarters at Omaha, and was promoted to superintendent of motive power and machinery in June, 1923. Mr. Burnett has been in Union Pacific service for more than 16 years. He was born at McCook, Neb., in 1890 and obtained his first railway experience as a steam hammer operator in the shops of the Chicago, Burlington & Quincy at that point in 1905. Seven years later he became a machinist apprentice on the Union Pacific at Cheyenne, Wyo., being advanced to foreman at Kearney, Neb., in 1913, general foreman at Grand Island, Neb., in 1917, district foreman at Laramie, Wyo., in 1921 and to master mechanic at Green River, Wyo., in 1922. In the latter year he was transferred to Cheyenne, being promoted to assistant superintendent of motive power and machinery at Omaha in August, 1928.

Engineering, Maintenance of Way and Signaling

D. A. Young, valuation engineer of the Chicago Junction, the Chicago River & Indiana and the Indiana Harbor Belt, with headquarters at Chicago has been appointed assistant chief engineer of the Chicago Junction and the Chicago River & Indiana with headquarters at the Union Stock Yards, Chicago, and the position of valuation engineer of the two railroads has been abolished. **Otto Gersbach**, chief engineer of the Chicago Junction with headquarters at Chicago has also been appointed chief engineer of the Indiana Harbor Belt with headquarters at Gibson, Ind. **R. A. Feldes**, chief engineer of the Indiana Harbor Belt, has been appointed assistant to the vice president and industrial agent with headquarters at Chicago.

John L. Campbell, who has been appointed chief engineer of the Northwestern Pacific, with headquarters at San Francisco, Cal., has been in railway engineering service for 34 years. He was born in Illinois in 1863 and when 25 years of age moved to El Paso, Tex., where he began civil engineering as a surveyor in Western Texas and New Mexico. He was appointed deputy county surveyor of El Paso county, Texas, in 1889 and was engaged in a river survey in co-operation with International Boundary Commission between the United States and Mexico.



John L. Campbell

From 1890 to 1894 he was city engineer of El Paso, then in 1895 being appointed engineer on construction of the Rio Grande Northern (operation discontinued) and in 1896 locating engineer on the Rio Grande, Sierra Madre & Pacific (now the Mexico North Western). From 1893 to 1904 he also served as a member of the board of directors and chief engineer of the Rio Grande Dam & Irrigation Co., a project that was later abandoned because of an injunction and subsequently taken over by the United States Reclamation Service. In 1897 Mr. Campbell became chief engineer on location and construction of the El Paso & Northeastern (now part of the South-

ern-Pacific) and subsequently he served until 1904 with the Atchison, Topeka & Santa Fe and the Arizona & New Mexico (now part of the Southern Pacific). He was chief engineer of the St. Louis, Kansas City & Colorado (now part of the Chicago, Rock Island & Pacific), during its construction between St. Louis, Mo. and Kansas City. From August, 1904, until early in 1905, he was engaged on a survey for the Phelps-Dodge Corporation, New York, for the construction of a railway from El Paso to a coal field in the San Juan river valley. In the latter year, he was appointed engineer of maintenance of way of the El Paso & Southwestern (consolidated with the Southern Pacific) being promoted to chief engineer in 1920. Following the consolidation of the E. P. & S. W. with the Southern Pacific in November, 1924, Mr. Campbell was appointed assistant to the chief engineer of the Southern Pacific with headquarters at San Francisco, and has been assigned to valuation work from 1926 until his appointment as acting chief engineer of the Northwestern Pacific with headquarters at San Francisco on October 26, of this year. He was president of the American Railway Engineering Association in 1922-1923.

Purchases and Stores

E. J. Clark, general foreman in the stores department of the Chicago, Burlington & Quincy at Havelock, Neb., has been promoted to storekeeper, with headquarters at Creston, Iowa, succeeding **F. M. Phebus**, who has been assigned to other duties.

C. S. Wetherholt, storekeeper on the Chesapeake & Ohio at Cane Fork, W. Va., has been transferred in the same capacity to Thurmond, W. Va. **C. A. Rice** has been appointed storekeeper at Cane Fork. **R. M. Taylor**, storekeeper at Boston, Ind., has been transferred in the same capacity to Shelby, Ky. He will be succeeded by **L. C. Clinkinbeard**.

Obituary

Frank J. Burke, land and industrial commissioner of the Texas & Pacific, died at his home in Dallas, Tex., on November 26, at the age of 58.

Harrison B. Hodges, former purchasing agent for the Long Island, died on November 24 at his home in Hollis, L. I. Mr. Hodges retired from railroad service in August, 1922.

John M. Hoar, assistant engineer of the Tennessee division of the Illinois Central, with headquarters at Fulton, Ky., died at his apartment in that city on November 14, following a heart attack. Mr. Hoar was 52 years of age and had been in the service of the Illinois Central for 30 years.

J. A. Mackinson, trainmaster of the Alamosa division of the Denver & Rio Grande Western at Durango, Colo., died in that city on November 20, at the age of 60 years. Mr. Mackinson entered railway service with the Great Northern

as a telegraph operator. In 1907 he was promoted to assistant superintendent at Breckenridge, Minn., then serving as assistant superintendent at Melrose, Minn., superintendent at Willmar, Minn., and Sioux City, Ia., and as superintendent of the Rio Grande Western at Grand Junction, Colo., from 1920 to 1923.

George Cassidy, assistant general freight agent of the Rutland, with headquarters at Rutland, Vt., died on November 12, at his home in Rutland from pneumonia. Mr. Cassidy was born in Walthamstow, Essex England, on December 21, 1852. He came to the United States in 1873, and shortly after entered the employ of the Central Vermont at St. Albans. He was appointed assistant general freight agent of the Central Vermont in February, 1892, and on June 1, 1899, he entered the service of the Rutland as general freight agent, remaining with that line until his death.

Lucius W. Wakeley, who retired from active railway service as assistant to the passenger traffic manager of the Chicago, Burlington & Quincy, with headquarters at Chicago, in December, 1926, died at Pelican Lake, Wis., on November 22, from pneumonia which was contracted following an operation in September. At the time of his retirement Mr. Wakeley had been in the service of the Burlington for more than 45 years. He was born in Nebraska on October 30, 1858, and after attending the United States Military Academy, West Point, N. Y., he became a clerk on the Burlington in November, 1881. From 1883 to 1896 he was advanced successively through the positions of chief rate clerk in the freight department, chief clerk in the freight department, local freight agent at Chicago, assistant to the general manager and assistant general passenger and ticket agent. On January 1, 1896, he was promoted to general passenger agent, serving in that capacity for the next 26 years on the Missouri lines of the Burlington, with headquarters at St. Louis, Mo., and on the lines west of the Missouri river, with headquarters at Omaha, Neb. Mr. Wakeley was appointed assistant to the passenger traffic manager, with headquarters at Chicago, in 1922, although he was retired with the title of general passenger agent.

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C. N. J. Ferries in New York Harbor